“NĒ HULI KA LIMA I LALO PIHA KA ‘ŌPŪ”:

‘ŌIWI AGENCY AND OUTCOMES OF ‘ĀINA-BASED EDUCATION

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ABSTRACT

This dissertation explores the agency of ʻāina-based education to cultivate reciprocal relationships between kānaka and ʻāina across the diverse learning environments in which it occurs. Unlike the conventional dissertation model organized by chapters, the following is organized by five stand-alone dissertation pūʻolo.

Pūʻolo 1: "ʻĀina-based Pedagogies: Ancestral Principles, Pedagogy, and Outcomes" explores the growth and evolution of ʻāina-based education within the context of ten ancestral principles. Findings reveal that āina-based pedagogies catalyzes ʻŌiwi agency, gives cultural knowledge relevance in our time, and utilizes ʻŌiwi approaches to education and well-being.

Pūʻolo 2: "Arriving at an ʻĀina Aloha Research Framework: What Is Our Kuleana as the Next Generation of ʻŌiwi Scholars" examines how my relationship to ʻāina influences my beliefs about research and how it guides me to conceptualize, enact, and disseminate research. This pūʻolo is a published book chapter in *Kanaka ʻŌiwi Methodologies: Moʻolelo and Metaphor*.

Pūʻolo 3: "Towards Living Mālama ʻĀina: Acting Upon Kuleana Through ʻOhana, Education, and Well-being" is a video presentation that illustrates how I have designed, applied, and evaluated ʻāina-based pedagogies within the context of intergenerational community education. I discuss my journey through education and facilitate a lāʻau lapaʻau lesson.

Pūʻolo 4: "Stories of ʻĀina-based Learning, Healing, and Transformation: I Ola Kākou i ka Hoʻolōkahi" explores five unique Oʻahu food systems through the lens of the next generation of aloha ʻāina practitioners, educators, healers, and leaders that care for them. Co-researchers present moʻolelo about (a) how their upbringing guided them to their current work, (b) the goals

of their education and leadership models, and (c) how their efforts contribute to the health of their communities.

Pūʻolo 5: "ʻĀina-based Pedagogies in Hawaiʻi Schools: Kōkua Hawaiʻi Foundation's ʻĀINA In Schools Program" is a descriptive study of the ʻĀINA In Schools Program, a farm to school initiative of the Kōkua Hawaiʻi Foundation. Findings suggest that the program is a powerful educational tool, a means for strengthening cultural identity, skills training for lifelong healthy living, and an impetus for community organizing.

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Introduction

"He ali‘i ka ‘āina, he kauwā ke kanaka"[1]

- Mary Kawena Pukui (1993, p. 62)[2]

In the nineteenth century, humanity entered into an age called the Anthropocene, or the age of man, which describes a human-centric world characterized by widespread population and economic growth, urbanization, international exchange, and exploitation of natural ecosystems (Hamilton, Gemenne, & Bonneuil, 2015). These issues have contributed to what has been termed, "The Global Syndemic," the triple threat of climate change, obesity, and undernutrition (Swinburn et al., 2019), which is forcing my generation into action. In response to this crisis, I reflect on the teachings of my ancestors, specifically the concept of he ali‘i ka ‘āina, he kauwā ke kanaka. It is evident that the role of humanity is to ensure the continuity of natural ecosystems because all life is sacred and all natural creation has a critical function and purpose in the universe (Kanahele, 2005). As a 33-year-old Kanaka ‘Ōiwi[3], I believe deep in my na‘au that my community possesses the ingenuity and agency to relearn and share with others how to reconnect with the sacredness of life and progress to a he ali‘i ka ‘āina, he kauwā ke kanaka worldview.

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[1] Hawaiian language words and phrases are used throughout the text. If English explanations for Hawaiian words are needed, see: Pukui M. K., & Elbert S. H. (1986). *Hawaiian dictionary: Hawaiian-English, English-Hawaiian (revised and enlarged ed.)*, Honolulu, HI: University of Hawaii Press. Alternatively, search www.wehewehe.org. Hawaiian words and phrases are only italicized and/or followed by an English translation in parentheses when they appear as a quote.

[2] He ali‘i ka ‘āina, he kauwā ke kanaka is an ‘ōlelo no‘eau which means "land is a chief, man is a servant." This ‘ōlelo no‘eau is one of over 2,900 collected and annotated ‘ōlelo no‘eau by Mary Kawena Pukui. See: Pukui, M. K. (1993). *‘Ōlelo no‘eau: Hawaiian proverbs & poetical sayings*. Honolulu, HI: Bishop Museum Press.

[3] Throughout the text, the following terms are used to describe descendants of the native people of ka pae ‘āina Hawai‘i: Kānaka ‘Ōiwi, Kānaka (plural), and Kanaka (singular). Kanaka, ‘Ōiwi, and Hawaiian are also used as adjectives. When written with a lowercase "k," kānaka (plural) and kanaka (singular) refer to all of humanity in general.

Aloha ʻĀina

Kānaka ʻŌiwi perpetuate a deep connection to the ʻāina, both physically and spiritually, as reflected in the cultural practice of aloha ʻāina. According to Goodyear-Kaʻōpua (2013):

> Aloha ʻāina expresses an unswerving dedication to the health of the natural world and a staunch commitment to political autonomy, as both are integral to a healthy existence. Although it is often imperfectly translated as both "love for the land" and "patriotism," the *aloha* part of this phrase is an active verb, not just a sentiment. As such, it is important to think of aloha ʻāina as a practice rather than as merely a feeling or belief. (p. 32)

As such, the practice of aloha ʻāina must require action or agency. I understand aloha ʻāina to be the agency of Kānaka ʻŌiwi to sustain and protect familial kinship and responsibility to that which nourishes life despite prevailing political and economic forces that further disconnect Kānaka ʻŌiwi from the ʻāina (Beamer, 2014). Aloha ʻāina represents a paradigm shift from the dominant anthropocentric worldview[4] to an eco-centric worldview that places value on animate and inanimate beings regardless of their practicality to human life (Kortenkamp & Moore, 2001; Leopold, 1986; Shiva, 2016). Additionally, aloha ʻāina is focused on cultivating balanced and interdependent relationships to the ʻāina, and in doing so, it challenges humanity to shape consumption patterns relative to the limitations and prospects of the local environment (Bowers, 2001; Morishige et al., 2017).

Aloha ʻāina practitioners continue the vital work of raising awareness and positively transforming the social realities of Kanaka ʻŌiwi communities such as lack of access to traditional, affordable, and healthy food rooted in forced separation from ancestral homelands.

[4] An anthropocentric worldview is characterized by a human-centric viewpoint that claims dominion over plants, animals, and the whole of nature (Hamilton, Gemenne, & Bonneuil, 2015).

One of these movements is centered on physically reconnecting Hawaiian communities, families, and students to the very ʻāina that fed their ancestors for generations through grassroots collaborative community efforts known as ʻāina-based initiatives. In the last decade, ʻāina-based initiatives have embraced teaching aloha ʻāina upon the natural landscapes and oceanscapes of Hawaiʻi. These programs have become more established across ka pae ʻāina Hawaiʻi (Ledward, 2013) and present an opportunity for Kānaka ʻŌiwi to "reconnect to ʻāina in holistic ways that unify the physical, emotional, and spiritual aspects of being ʻŌiwi" (Beamer, 2013, p. 60).

The Response of Hawaiʻi's Education System

In the Hawaiʻi State Department of Education (HIDOE), the Office of Hawaiian Education has designed and implemented department-wide policy, Nā Hopena Aʻo (HĀ), to ground education in Hawaiian language, culture, and place. In doing so, ʻāina-based education is now a statewide initiative to "foster connection to land, ʻohana and communities, and create pathways for local-global servant leadership" (State of Hawaiʻi, 2019). One example of how schools have made ʻāina-based education a priority is evident in the use of school gardens as a tool for academic instruction. During the 2017-2018 school year, the HIDOE reported that 87 percent of public schools utilize school gardens to teach a wide range of subjects including Hawaiian studies, science, language arts, health, special education, and career and technical education (Hawaiʻi State Department of Education, 2018). The introduction of HIDOE policy and the evidence gathered from teaching from the ʻāina through school gardens is a significant step forward. To transform humanity's impact on the earth, however, requires incorporating pedagogical approaches that instill aloha ʻāina into everyday life.

Research Purpose

This dissertation takes a closer look into

- the value of ʻāina-based education across diverse learning environments including natural ecosystems, regenerative community food systems[5], ʻohana and community life, and academic institutions, and,
- the agency of collaborative community efforts and educational entities to reestablish the importance of reciprocal relationships between people and their places through the platform of ʻāina-based education.

In referring to the theory and practice of ʻāina-based education, I use the term "ʻāina-based pedagogies" to define dynamic and interdisciplinary processes of learning and teaching that hail from the natural landscapes and oceanscapes of Hawaiʻi's environment. These processes, which emphasize reciprocal relationships between Kānaka ʻŌiwi and the ʻāina, draw upon place-specific intergenerational knowledge systems, language, and customary practices to frame curricula for all learners. The term pedagogy is more often used in its singular form. Although there are similarities in ʻāina-based education across ka pae ʻāina Hawaiʻi—such as an emphasis on the relationships between kānaka and ʻāina, sustainability, and a blend of both ancestral knowledge and foreign tools and frameworks—depending on the context, content, and purpose of implementation, the instructional strategies differ significantly. Therefore, the plural term "pedagogies" is used to be inclusive of the diverse learning contexts and approaches used in ʻāina-based education.

[5] According to the Rodale Institute (2014, p. 7), "Regenerative organic agriculture improves the resources it uses, rather than destroying or depleting them. It is a holistic systems approach to agriculture that encourages continual on-farm innovation for environmental, social, economic and spiritual well-being." For the purpose of this dissertation, the term regenerative community food systems is used to describe Hawaiʻi's food systems that align with regenerative organic agricultural practices. These include ʻŌiwi agricultural and aquacultural structures such as loʻi kalo, loko iʻa, and ʻāina maloʻo field systems that holistically nourish Hawaiʻi's communities in the present day.

ʻŌiwi Agency

As a Kanaka ʻŌiwi researcher, I use the lens of ʻŌiwi agency (Beamer, 2014; hoʻomanawanui, 2014) to conceptualize, enact, and disseminate my research. ʻŌiwi agency puts Kānaka ʻŌiwi and the use of ʻŌiwi perspectives at the center of the research framework. According to Smith (2012), "When indigenous peoples become the researchers and not merely the researched, the activity of research is transformed. Questions are framed differently, priorities are ranked differently, problems are defined differently, people participate on different terms" (p. 196). For the purpose of this dissertation, I understand ʻŌiwi agency to be

- the movement of Kānaka ʻŌiwi in rediscovering and claiming the use of ancestral knowledge, language, and practices in daily life including the research process (hoʻomanawanui, 2014), and
- the capacity of Kānaka ʻŌiwi to blend the use of ʻŌiwi and foreign frameworks to cultivate abundance for current and future generations (Beamer, 2014; Kealiikanakaoleohaililani & Giardina, 2016).

My identity as a Kanaka ʻŌiwi researcher is essential to framing how my research is conceptualized, enacted, and disseminated (Smith, 2012). In this next section, I focus on how I learned my reciprocal relationship to the ʻāina and describe how this pilina guides me through fulfilling my kuleana in research and education (Maunakea, 2016; Wilson, 2009).

Moʻokūʻauhau

"Nē huli ka lima i luna pōloli ka ʻōpū, nē huli ka lima i lalo piha ka ʻōpū"

- Kupuna Katherine Maunakea (1973)[6]

[6] "Nē huli ka lima i luna pōloli ka ʻōpū, nē huli ka lima i lalo piha ka ʻōpū" is an ʻōlelo noʻeau that was taught by Kupuna Katherine Maunakea. Because this ʻōlelo noʻeau was audio recorded, the word "nē" has been transcribed to match the pronunciation on the recording. However, the word "nē" is a colloquial variation of the word "inā" and although "nē" is commonly heard in spoken Hawaiian, it is uncommon in written form. This ʻōlelo noʻeau can be

Kupuna Katherine was an educator, composer, lauhala weaver, and an inspiration to the lāhui. In the early 1970s, Kupuna Katherine taught Hawaiian language and culture out of her Nānākuli home to many of my aunties, uncles, cousins, and keiki of the community. When my father, James "Butch" Kulanakila Maunakea Jr., returned home in 1976 from being stationed in Germany in the U.S. Army, he was fortunate to spend time with Kupuna Katherine and she encouraged him to learn ʻōlelo Hawaiʻi. My father spent a few years at University of Hawaiʻi Leeward Community College taking ʻōlelo Hawaiʻi classes from Kumu Naomi Losche. He also played volleyball and that is where he met my mother Hadassah "Oli" Puahi Na-o. They married and gave birth to my two older brothers James Kulanakila Maunakea III and Tyler Kaulana Maunakea. I was born in 1986 and raised in Waipahū, ahupuaʻa ʻo Hōʻaeʻae, moku ʻo ʻEwa, mokupuni ʻo Oʻahu, ka pae ʻāina ʻo Hawaiʻi.

My brothers and I were privileged to be raised in an active and loving ʻohana. Our afternoons were spent playing street hockey in our cul-de-sac and our weekends were spent paddling canoe and surfing. Growing up on Oʻahu, we spent most of our time outside. But other than being in the ocean for recreation or doing chores in the backyard, I did not connect to my natural surroundings or know it intimately. I was unaware of any other meaning to ʻāina except for "land" and it was not until later on in life that I learned about the ʻāina as my ʻohana and as a source of nourishment. As an adult, I discovered my kuleana and identity as a Kanaka ʻŌiwi—in Australia.

found on the Ka Leo Hawaiʻi tape HV24_106A. Ka Leo Hawaiʻi was a Hawaiian language radio show from 1972 to 1988 with interviews and phone calls from native speakers. For more information about Ka Leo Hawaiʻi and to access a select number of recordings, see: http://ulukau.org/kaniaina/

Discovering my Agency: Nē Huli ka Lima i Lalo

At 18 years of age, I left home to "go to college" in California and study to become a teacher. What I was doing, however, was trying to surf as many different surf breaks I could. After graduating with my Bachelor's degree in education, I moved to New Zealand for a year and then found my way to Australia where I started my career in education. I loved living in Australia. At 24 years old, I was teaching Kindergarten and surfing every day. Then one day while driving home from work I felt a jolt in my stomach. At that moment my naʻau pulled me back to Hawaiʻi.

> *You are doing great work but you are not teaching the keiki you are supposed to teach. You are not impacting the lāhui you are supposed to impact.*

That was the message. Once I reached my house, I opened my computer and I found the Hoʻokūlaiwi Masters of Education in Teaching program at the University of Hawaiʻi at Mānoa (UHM) College of Education[7]. I applied for the next cohort and booked my ticket home to Oʻahu.

Prior to leaving, I reflected on the Australian school curriculum that I had grown to love: outdoor learning, organic gardening class twice a week, eating fresh produce from the school garden, and students composting their food scraps after snack time. What was disheartening was that I was learning alongside my four and five year-old students because this style of education was non-existent in the schooling I had received. I was reprimanded often by my Kindergarteners when I tossed fruit peels in the trash, "No! Miss Summer. It goes in the

[7] The Hoʻokūlaiwi: Center for Native Hawaiian and Indigenous Education at UHM College of Education prepared educators to teach in Hawaiian immersion public schools and public schools with high populations of Native Hawaiian students. The program focused on increasing Native Hawaiian student achievement by preparing Native Hawaiian teachers who could serve as role models in the school community.

compost, remember!" There were a lot of basic things I did not know, such as the joy of growing my own food and eating fresh vegetables.

While in Australia I was given the nickname "salad-dodger" because whenever my friends and I went out to eat, I would eat all the fries and the cheeseburger on my plate and leave the salad—every time—because I hated the taste of it. It was humiliating and funny at the same time. I wondered:

> *Why am I the only one that gets the fries and everyone else orders vegetables? Are my horrible food choices a result of my upbringing? Or the lack of growing and trying fresh local produce?* And then the question that hurt the most, *Is it because I am distant from my home and I never really did know the ʻāina as a source of nourishment?*

This train of thought revealed even more questions about the health of my ʻohana, especially on my mother's Hawaiian side. The brother who raised her passed away in his early forties due to diet-related diseases. In fact, all of my aunties and uncles had health issues related to diet and lifestyle behaviors. To help transform the health patterns of my family, I moved back home to Oʻahu with the vision to transform our backyard from red Waipahū "dirt" and California grass into an organic garden. I knew I needed to grow food that tasted ʻono in order to change my lifestyle behaviors and those of my ʻohana.

Kumu Noʻeau Warner

As a graduate student at the University of Hawaiʻi at Mānoa (UHM), I was committed to learning about the relationship between ʻāina, education, and well-being. I also had a strong desire to continue learning ʻōlelo Hawaiʻi. My father insisted I learn from one of his classmates, Noʻeau Warner, a professor at the UHM Kawaihuelani Center for Hawaiian Language. After a

few classes, Kumu No‘eau asked me if I had ever listened to Kupuna Katherine Maunakea’s Ka Leo Hawai‘i recordings. He instructed me to make my way over to Moore Hall and download her interviews. He wanted me to listen to Kupuna Katherine’s voice and dialect to get a sense of what a first language speaker of my ‘ohana sounded like. He wanted me to pay close attention to how she spoke and the topics she brought in her interviews because there was something in her recordings I needed to hear.

As I listened, one of her haumāna spoke, “Nē huli ka lima i luna pōloli ka ‘ōpū, nē huli ka lima i lalo piha ka ‘ōpū. When your hands are turned up you have an empty stomach, when your hands are turned down you have a full stomach.” At that moment, I knew in my na‘au that the agency of turning my hands down into the soil was how I would begin to address the questions I had about my health issues and being disconnected from the ‘āina as a source of nourishment. The action of “huli ka lima i lalo” became my guide to cultivating a strong relationship and kuleana to what ‘āina we did have—a few hundred square feet behind our ‘ohana home in Waipahū. My dad and I started growing kalo so we could make our own laulau. We planted mai‘a, lā‘ī, and ‘uala around the house, and grew vegetables and fruit to give to our neighbors.

The Teachings of Ka Papa Lo‘i ‘o Kānewai

From my time at the Australian school where I had taught**,** I had gained some experience cultivating the soil and growing food, but my foundation in mahi ‘ai came from Ka Papa Lo‘i ‘o Kānewai—a lo‘i kalo and department within the UHM Hawai‘inuiākea School of Hawaiian Knowledge. I was privileged to learn how to grow native varieties of kalo and teach the mo‘olelo of this wahi pana for four years as I completed my graduate studies. Kānewai was my pu‘uhonua—my safe place to gain knowledge. Every day, I applied the values and practices that I learned to my garden at home in Waipahū.

The physical action of turning my hands down to bring water and life to the land helped me heal from a sense of shame that I held on to for not knowing much about caring for soil or how to grow food. Every harvest of kalo or māmaki became a new form of abundance that I could offer to neighbors and classmates. I remember the first time I harvested carrots from my garden and brought them to give to my teacher cohort. We all crunched into the carrots together and my classmates remarked on how flavorful they were. One classmate said it was the best carrot she ever had and asked if I could show her how I planted and grew them. I found myself daily sharing the freshly grown foods from my garden and the knowledge about specific plants and growing conditions. Sometimes I could not fall asleep at night because I was so excited about planning activities for my first graders at Nānāikapono Elementary School, a public school in a predominately Native Hawaiian community.

Early Experiences with Incorporating ʻĀina in Education

My student teaching and graduate research focused on the implementation of hands-on gardening and nutrition education during the No Child Left Behind era of educational reform. During this time, increased focus was placed on standardized test-based accountability, specifically in the areas of reading and mathematics to measure student achievement across the United States. At the school where I taught, No Child Left Behind was implemented through a federal and state-mandated curriculum designed for students to perform well on state and national student performance assessments. High-stakes testing and mandated curriculum left little time and flexibility for educators to teach subjects other than reading and mathematics. Nevertheless, I wanted my students to experience the ʻāina in their schooling, so I drew up my standards-based unit plans which were approved by my mentor teacher and the vice principal.

I received grant funding for each student to paint art on their own recycled bucket garden and plant either kalo or ʻuala cuttings, or cucumbers, corn, or tomato seeds. We used the growth of their plants as a foundation to tie in language arts, mathematics, visual arts, and science content in a way that was engaging and supported the social-emotional development of students. The students kept journals and wrote daily entries about how their plants made them feel as they cared for them, as they watched them grow, and as they tasted the fresh vegetables harvested. My research concluded that even in the context of an educational reform movement that left little room for curricular flexibility, integrating academic content and hands-on learning with ʻāina-based instruction led to increased literacy and cultivated a joy of learning within students.

Outcomes: Piha Ka ʻŌpū

Through the action of "huli ka lima i lalo" the bellies of my students, ʻohana, and friends were literally full. I became full in a spiritual sense because I now possessed nourishing food and knowledge to gift willingly to the people in my life. I discovered that even though I did not know what I was doing when I first moved home to transform my ʻohana's yard into a mālaʻai, the agency of "huli ka lima i lalo" led me to more than just an abundance of food. At a time when I needed it the most, Kupuna Katherine's teaching helped me develop a strong understanding of my identity and the kuleana that I had to educate the lāhui. Finally, as a growing scholar in academia, "huli ka lima i lalo" taught me that my research was essential and more of it was needed to advocate for the ʻāina to be normalized in academic settings no matter what educational reform movement dictated educational policy in Hawaiʻi.

The Present: Kōkua Hawaiʻi Foundation's ʻĀINA In Schools Program

It has been nearly ten years since discovering my kuleana and my own agency. I currently work for a non-profit organization called Kōkua Hawaiʻi Foundation (KHF) in a program called

‘ĀINA In Schools. In 2015, I was hired by Jack and Kim Johnson, the founders of the organization to bring my background of integrating indigenous Hawaiian knowledge and practices pertaining to mahi ‘ai, a practice of cultivating the soil to grow nourishing food, into Hawai‘i schools. Jack Johnson is a singer and songwriter who grew up on the north shore of O‘ahu. His love for Hawai‘i and his community influenced him and his wife Kim to create KHF in 2003. From this platform, Jack and Kim Johnson catalyzed a team to design an organizational structure that supports environmental education in Hawai‘i.

As a Kanaka ‘Ōiwi educator it is my kuleana to teach ancestral ‘Ōiwi principles about the ‘āina because it is the foundation of “environmental education” in Hawai‘i. The teaching of “huli ka lima i lalo” and the protocols and practices of mahi ‘ai are foundational to what I teach to students, community, and educators in the ‘ĀINA In Schools Program. I bring this perspective and openly welcome the perspectives of others just as Nainoa Thompson writes in his 2016 article:

> My father said carry your culture on your canoe. He said your people need it. They’re going to need that sense of your direction and your commitment to your heritage and your ancestors. They’re going to need to know that it counts and it’s important. My father said, make sure when you carry that identity and dignity of who you were and who you’re going to become, make sure you do it in a way that doesn’t compromise anyone of a different culture. He said we need everyone. (Thompson, 2016, p. 170)

I teach in communities of the diverse cultures and socio-economic backgrounds represented in Hawai‘i. I welcome everyone because, collectively, we must connect with our islands and each other. The main goal is to get students outside to “huli ka lima i lalo, piha ka ‘ōpū” so they too

may grow a reciprocal relationship with the ʻāina. As I work to transform the culture of education, I find more and more spaces for sacred ʻŌiwi teachings through the integration of ʻāina-based education.

In the next section, I discuss the structure of the dissertation and explain how each dissertation pūʻolo is a form of ʻŌiwi agency.

Dissertation Pūʻolo Framework

A pūʻolo is a leaf-wrapped bundle that can be used to carry food, offerings, or gifts. Pūʻolo means a message or idea. Young (1998) in *Rethinking the Native Hawaiian Past* writes about pūʻolo that contain ʻike that has evolved over generations of use and refinement by kūpuna. He identifies ancestral knowledge as ʻike kupuna and describes the process of imparting ʻike kupuna. He states, "The ability to convey *ʻike* came from a person's *naʻau* or "intestinal area." ʻIke from the *pūʻolo* was internalized in the *naʻau*, a literal and figurative storage cavity" (p. 13). In the beginning stages of my dissertation research, each pūʻolo was conceptualized as a "dissertation article." Laiana Wong, professor at the University of Hawaiʻi at Mānoa and a member of my dissertation committee, suggested that my "dissertation articles" be called pūʻolo because of the ʻāina-based nature of my dissertation research. Inspired by his insight, I developed each stand-alone pūʻolo as a bundle of knowledge that explores ʻāina-based pedagogies across diverse contexts and learning environments. What makes this dissertation format a uniquely Hawaiian framework is that each pūʻolo is designed to be used and refined over time.

An overview of the five pūʻolo follows[8].

[8] To facilitate the dissemination of this research, each of the five pūʻolo is a stand-alone body of knowledge. Therefore, there is repetition of frameworks and historical context throughout the five pūʻolo.

Pūʻolo 1: ʻĀina-based Pedagogies: Ancestral Principles, Pedagogy, and Outcomes

Pūʻolo 1 explores ten underlying ancestral Hawaiian principles that coalesce and form the foundation of ʻāina-based pedagogies: Moʻokūʻauhau, ʻōlelo Hawaiʻi, moʻolelo, aloha ʻāina, ʻike kupuna, ʻohana, kuleana, ʻāina momona, hoʻomana, and mauli ola. This pūʻolo is an examination of the growth and evolution of ʻāina-based initiatives within the context of these ancestral Hawaiian principles. Findings from this pūʻolo ground ʻāina-based learning in Kanaka ʻŌiwi perspectives and provide a foundation for the development of future ʻāina-based education frameworks. The content presented in this pūʻolo lends itself for use by fellow participant researchers and communities that utilize ʻāina-based pedagogies. This pūʻolo is an example of ʻŌiwi agency because it details the growth and evolution of ʻāina-based initiatives to meet the diverse needs of Kanaka ʻŌiwi communities in the present day. Pūʻolo 1 addresses the following questions:

- What are ʻāina-based pedagogies?
- What are the foundational ancestral principles of ʻāina-based pedagogies?
- How are ancestral principles given meaning through ʻāina-based education?

Pūʻolo 2: Arriving at an ʻĀina Aloha Research Framework: What Is Our Kuleana as the Next Generation of ʻŌiwi Scholars?

Pūʻolo 2 is a published book chapter in the *Hawaiʻinuiākea Monograph IV Kanaka ʻŌiwi Methodologies: Moʻolelo and Metaphors* edited by K-A. Kapāʻanaokalāokeola Nākoa Oliveira and E. Kahunawai Wright. Presented in this chapter is an approach to research in Hawaiian communities that is grounded in ʻike kupuna called the ʻĀina Aloha Research Framework (Maunakea, 2016). This pūʻolo is intended for an audience of students on a journey to clarify their role in academia as scholars or anyone interested in doing research within

Hawaiian communities. This pūʻolo is an example of ʻŌiwi agency because the researcher adapted ancestral values rooted in place as a lens to approach research within Hawaiian communities. Pūʻolo 2 addresses the following questions:

- How does relationship to ʻāina influence beliefs about research?
- How does relationship to ʻāina guide how research is conceptualized, enacted, and disseminated?

Pūʻolo 3: Towards Living Mālama ʻĀina: Acting Upon Kuleana Through ʻOhana, Education, and Well-being

Pūʻolo 3 is a video-recorded community presentation entitled: *Towards Living Mālama ʻĀina: Acting Upon Kuleana Through ʻOhana, Education, and Well-being* (Maunakea, 2015)[9]. The values of ʻohana and community, ʻike kupuna, holistic well-being, and lifelong learning is experienced through a hands-on lāʻau lapaʻau activity. The audience is ʻohana, community, fellow educators and participant researchers interested in designing, applying, and evaluating ʻāina-based curriculum in their learning settings. This pūʻolo is an example of ʻŌiwi agency because it examines the intergenerational transfer of knowledge and practice of lāʻau lapaʻau in daily life. Pūʻolo 3 addresses the following question:

- What is the process of designing, applying, and evaluating ʻāina-based learning within an intergenerational community education setting?

Pūʻolo 4: Stories of ʻĀina-based Learning, Healing, and Transformation: I Ola Kākou i ka Hoʻolōkahi

Pūʻolo 4 values cultural practitioner-educators as modern-day practitioners of the ancestral principles presented in Pūʻolo 1. This community-based study focuses on the

[9] This video is recorded by and used with permission from the Kamehameha Schools Ka Pua Initiative.

perspectives of the next generation of Kanaka ʻŌiwi mākua to articulate the collective gains, challenges, and needs of mālama ʻāina practitioners and their programs. This pūʻolo is an example of ʻŌiwi agency because it examines how the next generation of mahi ʻai and mahi iʻa practitioners are cultivating the ʻāina and influencing holistic well-being to their communities. The audiences for this article are the food producers, cultural practitioners, educators, and community members interested in the stories of ʻāina-based practitioners. Pūʻolo 4 addresses the following questions:

- How does upbringing guide mālama ʻāina practitioner/educator/mentors to the work that they currently do within their community food systems?
- What are the goals and of educational, mentorship, and leadership models of ʻāina-based initiatives on the island of Oʻahu?
- How do ʻāina-based efforts situated within Oʻahu's regenerative community food systems contribute to the well-being of the lāhui?

Pūʻolo 5: ʻĀina-based Pedagogies in Hawaiʻi Schools: Kōkua Hawaiʻi Foundation's ʻĀINA In Schools Program

Pūʻolo 5 examines Kōkua Hawaiʻi Foundation's ʻĀINA in Schools program. This includes an examination of my role in the network of partners involved in providing ʻāina-based opportunities for students and communities throughout ka pae ʻāina Hawaiʻi. This pūʻolo details how ʻāina-based pedagogies translate into classroom practice and what impact they have on the school community. The intended audience for this article include educators, community members, principals, program leaders, and ʻāina-based program resource support structures. This pūʻolo is an example of ʻŌiwi agency because it examines the programming and outcomes of

ʻāina-based education in the constructs of Hawaiʻi's education system. Pūʻolo 5 addresses the following questions:

- What are the goals of the ʻĀINA In Schools Program?
- What does ʻĀINA In Schools programming look like?
- What changes actualize in the school community as a result of the ʻĀINA In Schools Program?

With the bundled intentions of healing communities, catalyzing change, and standing strong as a link between the knowledge of the past and its enactment in the future, I humbly offer these pūʻolo.

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PŪ‘OLO ONE

‘ĀINA-BASED EDUCATION:

ANCESTRAL PRINCIPLES, PEDAGOGY, AND OUTCOMES

Introduction: What is ‘Āina-based Education?

> As Hawaiians, we have a powerful kinship to the ‘āina. This familial connection continually reminds us of our kuleana (responsibility) to each other and the planet. The ‘āina is as much a theater for learning as it is a repository of life. ‘Āina can be a teacher, a classroom, and a living laboratory for education in next-century skills, sustainability, and self-determination. (Ledward, 2013, p. 35)

The term ‘āina[1]-based education has only recently emerged in the fields of education and educational research, whereas the foundational principles that undergird ‘āina-based education date back to ancient times. ‘Āina-based pedagogies are dynamic and interdisciplinary processes of learning and teaching that hail from the natural landscapes and oceanscapes of Hawai‘i’s environment. These processes, which emphasize reciprocal relationships between Kānaka ‘Ōiwi and the ‘āina, draw upon place-specific intergenerational knowledge systems, language, and customary practices to frame curricula for all learners. In Ledward’s (2013) study of ‘āina-based education in the dryland forest of Ka‘ūpūlehu on the west side of Hawai‘i Island, he describes students “coming to appreciate their ‘āina as a rich source of knowledge and a launch-pad for

[1] ‘Āina encompasses land, earth—that which feeds and that which signifies a sense of homeland relations between people and the land. Hawaiian language, words and phrases are used throughout the text. If English explanations for Hawaiian words are needed, see: Pukui M. K., & Elbert S. H. (1986). *Hawaiian dictionary: Hawaiian-English, English-Hawaiian (revised and enlarged ed.)*, Honolulu, HI: University of Hawaii Press. Alternatively, search www.wehewehe.org. Hawaiian words and phrases are italicized and/or followed by an English translation only when quoted.

future career aspirations" (Ledward, 2013, p. 38). He suggests that ʻāina-based learning can guide future educational programs and initiatives into the future

- through the sharpening of people's critical thinking and problem-solving skills through firsthand experience with the ʻāina—linking newly-acquired knowledge with enduring cultural principles,
- by understanding long-term consequences of people's actions, as well as their dependence on available resources, and
- as sites for self-determination through developing a kinship and kuleana to Hawaiʻi which may lead to civic engagement and political action (Ledward, 2013).

ʻĀina-based initiatives, then, are emerging as catalysts for transformative praxis—empowering the lāhui to enact agency and actualize a more pono existence (G. H. Smith, 1997; 2005).

The Need to Claim Kanaka ʻŌiwi Processes of Learning and Teaching

> Once a space has been cleared of native culture and attachment, its voice becomes that of the detached scientist and the citizen-of-the-world environmentalist. (Beamer, 2014, p. 41)

Kanaka ʻŌiwi[2] and indigenous scholars assert the need to claim indigenous identities, research, language, schooling, and systems to make positive differences in their lives (hoʻomanawanui, 2008; Kanaʻiaupuni, Ledward, & Malone; 2017; Maaka, 2004; L. T. Smith; 2012). ʻĀina-based initiatives are not only proliferating in Hawaiʻi communities, but also in academic institutions where interest in place-based and project-based education; sustainability education; social-emotional learning; science, technology, engineering, and mathematics

[2] Throughout the text, the following terms are used to describe descendants of the native people of ka pae ʻāina Hawaiʻi: Kānaka ʻŌiwi, Kānaka Maoli, Kānaka (plural), Kanaka (singular), and Hawaiian. Kanaka, ʻŌiwi, and Hawaiian are also used as adjectives.

education (STEM); farm to school[3]; and Nā Hopena Aʻo policy has increased (Hawaiʻi State Department of Education, 2012, 2017; Hawaiʻi Leadership Forum, 2019). In my review of the literature, I have not found a conclusive framework that offers a detailed pedagogy for ʻāina-based learning. This missing piece presents an opportunity for Kānaka ʻŌiwi to define what ʻāina-based education entails and the desired outcomes in the context in which it occurs. Such discussions may help communities evaluate the impact of their programming and lead to further improvement of their ʻāina-based initiatives.

Revisiting the Term "ʻĀina-based"

It is important to note that the term "ʻāina-based education" is contentious. Oliveira (2017) claims that "ʻāina-based" merely Hawaiianizes "place-based" in reference to place-based pedagogy, as "place" is simply translated to "ʻāina." Instead, she uses that term "aloha ʻāina-placed education" and emphasizes that aloha ʻāina-placed education is:

> ...more than simply learning that occurs outside of the classroom. Aloha ʻāina-placed education is a recognition that Kanaka are genealogically related to the ʻāina and the ʻāina is our ancestor. The ʻāina is not only the source of our physical nourishment, but it also feeds us spiritually and mentally. Aloha ʻāina-placed education reinforces the notion that Kanaka have a birthright to reside on the ʻāina and by virtue of this birthright we also have a kuleana (responsibility, burden) to care for and protect the ʻāina. (Oliveira, 2017, p. 6)

I agree with Oliveira that the term ʻāina-based education has become mainstream. Her justification that more emphasis is needed to articulate genealogical relationship and kuleana to

[3] According to the National Farm to School Network (2017), farm to school focuses on three components: school gardens, education, and procurement—the practice of sourcing local food for schools or preschools. Farm to school is a movement that provides agriculture, health, and nutrition education opportunities, such as school gardens, farm field trips, and cooking lessons to schools and communities.

ʻāina resonates with me. Yet it is unclear from the literature where the term "ʻāina-based" originates or whether or not the term was intended to be a Hawaiianized version of "place-based education." This uncertainty highlights the need to clarify the use of Hawaiian terms and concepts in educational frameworks. Claiming the use of the term "ʻāina-based education" puts Kānaka ʻŌiwi in the place of power to define what ʻāina-based education truly requires.

Defining Pedagogies of ʻĀina-based Education

The term pedagogy refers to the theory and practice of education. Pedagogy includes the context, relationships, purpose, content, instructional strategies, and impact related to the learning setting, and is generally used in its singular form. Although there are similarities in ʻāina-based education across the pae ʻāina, such as emphasis of place-based knowledge and sustainability practices, learning approaches may differ significantly depending on the context and the environment. Therefore, the term "pedagogies" is used to describe the diverse learning contexts that ʻāina-based education provides, the fields in which it is applied, and the instructional approaches used to guide learners in ʻāina-based relationships.

The learning environments in which ʻāina-based education occurs are cultural kīpuka where Hawaiian culture can be regenerated and revitalized in contemporary settings (McGregor, 2006). In this section, the learning environments, the purposes of use in diverse fields, and instructional strategies used in ʻāina-based education are listed in order to provide the context of ʻāina-based pedagogies.

ʻĀina-based education has been observed across diverse learning environments which include, but are not limited to

- natural ecosystems—native forests and ocean/reef systems,

- restorative community food systems—loʻi kalo, loko iʻa, ʻāina maloʻo: dryland and rain-fed field systems, organic farms, mālaʻai, community gardens, medicine gardens, food forests, and school gardens,
- home and community life—wahi pana, home gardens, public health centers, and community non-profit organizations, and
- academic institutions—Hawaiʻi's private, public, and charter schools; post-secondary institutions such as the University of Hawaiʻi System; and private colleges and universities.

The diversity of settings in which ʻāina-based learning occurs is paralleled by the variety of fields in which it is applied and purposes for which it is of benefit. These include

- Hawaiian language revitalization (Oliveira, 2017),
- sustainability and STEM education (Hawaiʻi Leadership Forum, 2019),
- Kanaka ʻŌiwi and indigenous leadership (Ah Nee-Benham, 2016; Aldana, 2019; Beamer, 2013; Cajete, 2015; Osorio, J. K., & Osorio J., 2016; Oliveira, 2017),
- native plant restoration and invasive species control (Sato & Cavalieri, 2019),
- food sovereignty (Enos, 2015; Goodyear-Kaʻōpua, 2013; Meyer, 2014),
- biocultural restoration (Kurashima, Jeremiah, & Ticktin, 2017; Lincoln et al., 2018; Morishige et al., 2018),
- workforce development (Maunakea-Forth & Abbott, 2015),
- epigenetics, economics, and public health (A. K. Maunakea & Juarez, 2018; Fujita, Braun, & Hughes, 2004),
- intergenerational education (Nāone, 2008, S. M. Maunakea, 2014), and
- cultural literacy (hoʻomanawanui, 2008).

As well, the instructional approaches of ʻāina-based learning are guided by ʻŌiwi processes of knowing and doing such as

- ceremonial protocol to remind participants of their pilina and accountability to place, genealogy, and akua (Goodyear-Kaʻōpua, 2013),
- kilo—observation (Morishige et al., 2018),
- au ʻāpaʻapaʻa—ancestral ways of timekeeping such as solar cycles, moon cycles, and seasons (Oliveira, 2014),
- ma ka hana ka ʻike—learning through doing (Lincoln et al., 2018; Meyer, 2014),
- laulima—many hands working together to start and complete tasks. Laulima broadly includes the organizations that advocate for and help build capacity of ʻāina sites to manage their own biocultural resources (Kuaʻāina Ulu ʻAuamo, 2019), and
- ʻŌiwi agency—blending the use of ʻŌiwi and foreign frameworks to cultivate abundance for current and future generations (Beamer, 2014; Kealiikanakaoleohaililani & Giardina, 2016).

In this section, the learning environments, the purposes of use in diverse fields, and instruction strategies used in ʻāina-based education are listed in order to provide the context of ʻāina-based pedagogies. The following section details the data sources gathered in order to explore ancestral ʻŌiwi principles of ʻāina-based programming.

Data Sources

The multifaceted nature of ʻāina-based learning is documented throughout the disciplines of education, public health, natural resource management, agroecology, Hawaiian studies, language studies, anthropology, geography, psychology, and political science, to name a few. To illustrate this multifaceted nature, various academic research articles and book chapters in the

fields mentioned above have been gathered from online databases using the following search/key terms: "'āina-based -learning, -education, -program", "land-based education", "biocultural restoration", "indigenous education", and "culture-based education." A spreadsheet has been created to categorize search results according to location and type of program sites, funders, and resource support, and type of research, which includes published research and evaluation studies, unpublished theses and dissertations, and descriptive studies (see Figure 1).

The literature in the field of 'āina-based education is growing. But programmatic structure, pedagogical approaches, and program findings are not always reported in written form or made available on online sources. Oral presentations by many cultural practitioners and educators who are leaders in their communities are often made at conferences and community presentations. Therefore, attended presentations and presentation findings are included as a category to affirm the knowledge generated by community-engaged research.

As the attention toward and demand for 'āina-based learning continues to grow, my research aims to expand understanding of the contexts in which learning and teaching from the 'āina can occur, while grounding 'āina-based methodology in Hawaiian worldview. My research seeks to describe the pedagogies and outcomes of 'āina-based initiatives through the framework of ten guiding 'Ōiwi ancestral principles.

Guiding Ancestral Principles of 'Āina-based Pedagogies

> The traditional principles of traditional knowledge…remain fixed and provide the framework within which new experiences and situations are understood and given meaning. As such, these principles are the means by which cultural knowledge becomes remade and given meaning in our time. (Carl Urion in Stewart-Harawira 2005, p. 155)

ʻĀina-based Component	Organization Name/School	Host Organization	Setting	Published Literature/ Conference Presentations
Assessment/Evaluation	Waipā - Mehana Blaich Masters Thesis	Waipā Foundation	Ahupuaʻa	Blaich (2003)
Assessment/Evaluation	Waipā - Molly Mamaril Masters Thesis	Waipā Foundation	Ahupuaʻa	Mamaril (2015)
Educational Program	First Nation Futures Programs	Kamehameha Schools	Multiple	Beamer (2013)
Educational Program	Hoʻolauna Programs	Kamehameha Schools	Loʻi Kalo/Loko Iʻa	hoʻomanawanui (2008)
Educational Program	Hoʻomākaʻikaʻi Programs	Kamehameha Schools	Multiple	
Educational Program	ʻĀINA In Schools	Kōkua Hawaiʻi Foundation	School Gardens	
Educational Program	Mauiakama	UHM/UHMCC	Loʻi Kalo/Mulitple	Oliveira (2017)
Educational Program	Nā Kilo ʻĀina	Nā Kilo ʻĀina	Multiple	Morishige et al (2017)
Educational Program	Noho Papa	Edith Kanakaʻole Foundation	Multiple	
Educational Program	Mālama Learning Center	Mālama Learning Center	Multiple	Sato & Cavalieri (2019)
Foundation/Resource Support	Castle Foundation	Castle Foundation	-	
Foundation/Resource Support	Consuelo Foundation	Consuelo Foundation	-	
Foundation/Resource Support	Hauʻoli Mau Loa Foundation	Hauʻoli Mau Loa Foundation	-	
Foundation/Resource Support	Kohala Center	Kohala Center	-	
Foundation/Resource Support	Kōkua Hawaiʻi Foundation	Kōkua Hawaiʻi Foundation	-	
Foundation/Resource Support	KUPU	KUPU	-	
Foundation/Resource Support	Mālama ʻĀina Foundation	Mālama ʻĀina Foundation	-	
Hui/Network	Hawaiʻi Farm to School Hui	Hawaiʻi Public Health Institute	-	
Hui/Network	ʻĀina Ulu	Kamehameha Schools	-	Hannahs (2014)
Hui/Network	Koʻolauloa ʻĀina-based Education Hui	Castle Foundation	-	
Other Research	Billy Lee's Masters Thesis	UH Mānoa	-	Lee (2014)
Other Research	ʻĀina Ulu Report (2011)	Kamehameha Schools	-	
Other Research	ʻĀina-based Education Systems Map	Hauʻoli Mau Loa/KS/Consuelo/ Hawaiʻi Leadership Forum	-	Hawaiʻi Leadership Forum (2019)
Program Site	He Moku He Waʻa, He Waʻa He Moku Farm	Kānehūnāmoku Voyaging Academy	Loʻi Kalo/ʻĀina maloʻo	Goodyear-Kaʻōpua (2013)
Program Site	Hoʻoʻuluʻulu Kahaluʻu	Hoʻoʻuluʻulu Kahaluʻu	ʻĀina maloʻo	Lincoln et al. (2018)
Program Site	Hoʻokuaʻāina	Hoʻokuaʻāina	Loʻi Kalo	
Program Site	Hoʻoulu ʻĀina	Kōkua Kalihi Valley	ʻĀina maloʻo, native forest	Mahi (2013); Baker (2018); Aldana (2018)
Program Site	Hui Kū Maoli Ola	Hui Kū Maoli Ola	Native Plants	Barboza (2013)
Program Site	Hui Mālama i ke Ala ʻŪlili (huiMAU)	Hui Mālama i ke Ala ʻŪlili (huiMAU)	ʻĀina maloʻo	Peralto (2018); Lincoln et al. (2018)
Program Site	Ka Honua Momona	Ka Honua Momona	Loko Iʻa	
Program Site	Ka Papa Loʻi ʻo Kānewai	Hoʻokahe Wai Hoʻoulu ʻĀina/UH Mānoa	Loʻi Kalo	Maunakea (2016)
Program Site	Ka Papa Loʻi ʻo Punaluʻu	Kamehameha Schools/UHM	Loʻi Kalo	
Program Site	Kaʻala Farm	Kaʻala Farm	Loʻi Kalo	
Program Site	Kahana - Uncle Nana	Kahana - Uncle Nana	Loʻi Kalo	
Program Site	Kākoʻo ʻŌiwi	Kākoʻo ʻŌiwi	Loʻi Kalo/ʻĀina maloʻo	Aikau & Camvel (2016)
Program Site	Kānehūnāmoku Voyaging Academy	Kānehūnāmoku Voyaging Academy	Waʻa/Loʻi Kalo	Goodyear-Kaʻōpua (2013)
Program Site	Keiki o ka ʻĀina	Keiki o ka ʻĀina	Māla'ai/Loʻi Kalo	
Program Site	Kuʻu Home Kulāiwi (Aunty Nona's)	Kuʻu Home Kulāiwi (Aunty Nona's)	Loʻi Kalo	
Program Site	Kumano I Ke Ala	Kumano I Ke Ala	Loʻi Kalo	
Program Site	Loko Ea	Loko Ea/KS	Loko Iʻa	
Program Site	Ma Ka Hana Ka ʻIke	Ma Ka Hana Ka ʻIke	ʻĀina maloʻo/Loʻi Kalo	
Program Site	Mālama Haleʻiwa Loʻi	Fitzsimmon ʻOhana	Loʻi Kalo	
Program Site	MAʻO Organic Farms/Farm2Fork	MAʻO Organic Farms	ʻĀina maloʻo	K. Maunakea-Forth & Abbott (2015); Enos (2015)
Program Site	Māla Kaluʻulu	Māla Kaluʻulu	ʻĀina maloʻo	Lincoln et al. (2018)
Program Site	Maluaka	Maluaka	ʻĀina maloʻo	Lincoln et al. (2018)
Program Site	Māmaki Farm	Kamehameha Schools	ʻĀina maloʻo	
Program Site	Nohoʻana Farm	Nohoʻana Farm	Loʻi Kalo/Māla'ai	
Program Site	Nā Mea Kūpono	Nā Mea Kūpono	Loʻi Kalo	
Program Site	Paepae o Heʻeia	Paepae o Heeia/KS	Loko Iʻa	
Program Site	Papahana Kuaola	Papahana Kuaola/KS	Loʻi Kalo	Nahale-a, Rueles, Ana (2015)
Program Site	Ulu Mau Puanui	Ulu Mau Puanui	ʻĀina maloʻo	Lincoln et al. (2018)
Program Site	Ulupō Heiau	Hikaʻalani	Heiau/Loʻi Kalo	
Program Site	Waianu Farm	Uncle Charlie & Paul Repun	Loʻi Kalo/ʻĀina maloʻo	
Program Site	Waipā Foundation	Waipā Foundation	Ahupuaʻa	Blaich (2003); Vaughan (2018)
Program Sites at Schools	Ka Papa Loʻi Project - Aihualama	Hālau Kū Mana	Loʻi Kalo	Goodyear-Kaʻōpua (2013)
Program Sites at Schools	Kaʻiwakīloumoku Hawaiian Cultural Center	KS - Kapālama	ʻĀina maloʻo	
Program Sites at Schools	Ke Kula Kaiāpuni ʻo Ānuenue	Ke Kula Kaiāpuni ʻo Ānuenue	Loʻi Kalo	
Program Sites at Schools	Waipiʻo Valley with Uncle Nālei Kahakalau	Kanu O Kā ʻĀina PCS	Loʻi Kalo	Nāone (2008)
Program Sites at Schools	WCC Nursing Pathways Garden	Windward Community College	ʻĀina maloʻo/Lāʻau Lapaʻau	

Figure 1. ʻĀina-based program data source spreadsheet

A review of the literature reveals ten principles[4] of ancestral knowledge that undergird ʻāina-based pedagogies. These principles are critical factors in ʻāina-based programming because they strengthen familial and reciprocal relationships between Kānaka ʻŌiwi and the ʻāina. By identifying these principles, Kānaka ʻŌiwi are able to frame their cultural practices and teachings within the context of ancestral values while at the same time bringing the relevance of place-specific cultural knowledge and practice to the present day. Using a framework of ten ʻŌiwi ancestral principles, the aim of this pūʻolo is to

- describe how ʻāina-based initiatives are reclaiming the use of indigenous knowledge and practice that strengthens relationships between kānaka and the ʻāina, and
- highlight the outcomes of such initiatives.

Each principle, as presented here, includes descriptions from a range of knowledge holders and how it is enacted through place-specific ʻāina-based efforts. From this body of information, it is clear that each principle is inextricably linked to a number of others, thereby illustrating the complexities involved in reclaiming the teachings of our kūpuna in order to share them with succeeding generations (Young, 1998). The ten principles are discussed below.

Moʻokūʻauhau

This section describes how ʻāina-based initiatives draw upon moʻokūʻauhau to recall and reinvigorate Kanaka ʻŌiwi relationships to the ʻāina. The term moʻokūʻauhau is described as genealogy (Pukui & Elbert, 1986). Kānaka ʻŌiwi are lineal descendants of akua Hawaiʻi as

[4] Moʻokūʻauhau, ʻōlelo Hawaiʻi, hoʻomana, ʻāina momona, kuleana, aloha ʻāina, mauli ola, ʻike kupuna, moʻolelo, and ʻohana are the ten "ancestral principles" selected from the knowledge base. They are called "ancestral principles" in reference to the values and practices that have been exercised by generations of Kānaka ʻŌiwi. Furthermore, the ʻāina-based programs discussed in this pūʻolo have come to recognize these values and practices as guiding principles of their work. With that being said, it should be emphasized that ʻāina-based organizations must consider the values and practices most aligned to their place and context whether they are discussed in this pūʻolo as an "ancestral principle" or not.

established in moʻokūʻauhau. Genealogies are understood as unbroken chains that link "those alive today to the primeval life forces—to the *mana* (spiritual power) that first emerged with the beginning of the world" (Kameʻeleihiwa, 1992, p. 20). The sharing of moʻokūʻauhau through reciting mele koʻihonua, cosmogonic genealogies, is a common practice amongst ʻāina-based programs to acknowledge and connect with the mana of their places.

Research conducted by Kanaka ʻŌiwi historians and scholars to bring forth knowledge of mele koʻihonua help ʻāina-based organizations connect their program efforts to specific places and purposes. For example, Oliveira (2014) recounts primary source documentation of mele koʻihonua to reiterate the importance of moʻokūʻauhau in understanding Kanaka ʻŌiwi worldview. Oliveira introduces commonly referenced mele koʻihonua such as the *Kumulipo*, *Papa and Wakea*[5]*, Mele a Kamahualele, Ka Moolelo Kumulipo-Kumuhonua o Hawaii, Ololo/Lolo,* and *Opuukahonua/Opukahonua*. Oliveira (2014) states, "These historical accounts are foundational to a Kanaka geography and a sense of place because they identify and connect Kānaka to our kūpuna (ancestors; elders) and our ancestral homelands" (p. 24).

The mele koʻihonua of Papa, Wakea, and Haloa is a genealogical account of the birth order of the islands of Hawaiʻi and origin of Kānaka ʻŌiwi through the ancestor Haloanakalaukapalili, the first kalo plant and staple food of the Hawaiian people. This mele is a significant mele koʻihonua referenced amongst ʻāina-based programs specific to the cultivation of kalo. Malo (1903/1951) provides this account of Papa and Wakea:

O Wakea noho ia Papa-hanau-moku,	Wakea lived with Papa, begetter of islands,
Hanau Hawaii, he moku,	Begotten was Hawaii, an island,
Hanau Maui, he moku.	Begotten was Maui, an island.

[5] The names of akua are written without diacriticals unless they appear quoted by another author.

Hoi hou o Wakea noho ia	Wakea made a new departure and lived
Hoo-hoku-ka-lani.	with Hoo-hoku-ka-lani.
Hanau Molokai he moku,	Begotten was Molokai, an island,
Hanau o Lanai ka ula, he moku.	Begotten was red Lanai, an island.
Lili-opu-punalua o Papa ia	The womb of Papa became jealous at its
Hoo-hoku-ka-lani.	partnership with Hoo-hoku-ka-lani.
Hoi hou o Papa noho ia Wakea.	Papa returned and lived with Wakea.
Hanau o Oahu, he moku,	Begotten was Oahu, an island,
Hanau o Kauai, he moku,	Begotten was Kauai, an island,
Hanau o Niihau, he moku,	Begotten was Niihau, an island,
He ula a o Kahoolawe.	A red rock was Kahoolawe. (p. 243)

To help understand the importance of this mele koʻihonua in the context of education specific to kalo cultivation, Pukui, Haertig, and C. A. Lee (1972) offer this interpretation of the account of Papa and Wakea and the birth of Haloa:

> Hawaiian mythology tells that Wakea and Papa ("sky" and "earth") gave birth both to islands and children. The daughter, Hoʻohokuokalani[6], mated with her father, Wakea. She gave birth first to Hāloa, a child born as a taro. Later she delivered Hāloa, the "younger brother", born as a man. Mystically, man and taro, were the same. (p. 3)

Kameʻeleihiwa (1992) discusses three historical metaphors from the moʻolelo of Papa and Wakea. One lesson is the familial relationship Hawaiians share with the land and the kalo. The relationship of humanity with the land is one of reciprocity. The role of the land, the kalo, and

[6] Pukui, Haertig, and C. A. Lee (1972) write Hoʻohokuokalani while Malo (1903/1951) writes Hoo-hoku-ka-lani. Although the name is spelled differently, it is believed to be the same entity.

the chiefs is to provide for and protect their younger siblings, the people of Hawai‘i. Reciprocally, it is the responsibility of the people of Hawai‘i to serve and honor their elders—the chiefs, the kalo, the land, and the elements of nature that ordered creation. She continues, “Clearly, by this equation, it is the duty of Hawaiians to *Mālama ‘Āina*, and, as a result of this proper behavior, the *‘Āin*a will *mālama* Hawaiians” (p. 25). Through reciting the mele ko‘ihonua of Papa and Wakea and heeding its lessons, relationships between kānaka and ‘āina are reinvigorated.

The strengthening of relationships between Kānaka ‘Ōiwi and Haloanakalaukapalili can also be achieved through physical connection. This was observed by Aikau and Camvel in their 2016 article on the production of poi and the educational efforts of Kāko‘o ‘Ōiwi—an ‘āina-based initiative in the He‘eia ahupua‘a, O‘ahu:

> The Māhuahua ‘Ai o Hoi project, which translates to “re-planting the fruit of Hoi,” strives to restore this relationship by providing the larger community with opportunities to volunteer at the lo‘i on community workdays...these events offer volunteers and staff the experience to connect with Hāloa, to enter into the lepo of Papa with hands, feet, body and mind, to plant, or weed kalo, to sink into the walewale of the ‘āina momona. For Kānaka Maoli, this is the embodiment of Hāloa on the ‘ōiwi body. (Aikau & Camvel, 2016, p. 545)

In this excerpt, Aikau and Camvel (2016) talk specifically about ‘āina-based programming providing access for Kānaka ‘Ōiwi to reconnect with akua Hawai‘i as a way to relearn the feeling of familial relationship to the ‘āina. For example, by entering the lo‘i to help pull weeds around the kalo, Kānaka ‘Ōiwi become immersed physically in Papahanaumoku, the soil and earth, Kāne, the fresh water that feeds the kalo, and Haloanakalaukapalili, the kalo that provides

nourishment. In these ways, ʻāina-based efforts nourish Kānaka ʻŌiwi in physical and spiritual ways that restore reciprocal relationships between Kānaka ʻŌiwi and akua Hawaiʻi through the action of caring for the ʻāina.

Another program that aims to restore familial relationships to ʻāina does so within the setting of Hawaiʻi's education system. Goodyear-Kaʻōpua (2013) provides a portrait of a Hawaiian-culture based charter school on Oʻahu called Hālau Kū Mana. Hālau Kū Mana's multidisciplinary Papa Loʻi Project is part of the school's curriculum where eleventh and twelfth-grade students restore and care for a ʻauwai and loʻi kalo system in ʻAihualama, a section of land in Mānoa Valley, Oʻahu. She gave an account of student, teacher, and community efforts to restore water flow to ʻAihualama stream, and in doing so described the ecological, political, and cultural significance of rebuilding indigenous agricultural systems. ʻAihualama is located at the back of Mānoa Valley in an ahupuaʻa that has been developed to meet the needs of a growing tourism industry. According to Goodyear-Kaʻōpua (2013), ecologically, restoring the water flow to ʻAihualama allowed for native ecosystems to flourish once again in the area. Politically, the restoration of an indigenous agricultural system proved that Kānaka ʻŌiwi can work to provide for themselves, without having to rely on the dominant global market economy. And culturally, she recounted the experience of a student who did not grow up with her grandparents, however during her time caring for ʻAihualama she articulated being nurtured by the "oldest kūpuna", the winds and the rains of Mānoa Valley. These examples illustrate how ʻāina-based initiatives seek to strengthen and invigorate familial relationships between Kānaka ʻŌiwi and the ʻāina.

ʻŌlelo Hawaiʻi

This section describes how ʻāina-based initiatives are using ʻōlelo Hawaiʻi to communicate the history and characteristics of places around the pae ʻāina while at the same

time increasing Hawaiian language proficiency within learners. The use of ʻōlelo Hawaiʻi is an important aspect of ʻāina-based education because it helps Kānaka ʻŌiwi strengthen their cultural identity and develop new domains to revitalize ʻōlelo Hawaiʻi in the present day.

ʻŌlelo Hawaiʻi contains the stories and the shared identity of its people (Warner, 1999) and it connects learners to the history and essence of a particular ʻāina (Oliveira, 2014, 2017; Veincent, 2016). One of the ways that programs instill place-specific knowledge is by teaching the place names and the stories of their ʻāina. According to Oliveira (2014), "Place names often detail the physical features of the natural environment, enumerate significant historic events of the place, and catalog natural resources of the locale" (p. 78).

In addition to ʻōlelo Hawaiʻi as a foundation to transfer place-specific knowledge, the identity of a people is also tied to its language. The intentional use of ʻōlelo Hawaiʻi in ʻāina-based programming is critical to strengthening a Kānaka ʻŌiwi cultural identity. Warner (1999) attests:

> The Hawaiian language should be perpetuated because it is part of Hawaiian heritage—what can help to make Hawaiians whole again as a people. Hawaiians need to learn and know their language, culture, stories, histories, and religion because they interrelate and are integrally linked to one another and to the people. (p. 77)

Young (1998) affirms Warner's belief in the restorative power of ʻōlelo Hawaiʻi. He speaks of the ability of Kānaka ʻŌiwi to be empowered by the proper use of ʻōlelo Hawaiʻi, "The mana of the past can be invoked by those who descend from the ancestral source by employing the words and their many levels of meaning properly in either oral or written modes" (p. xiii). Also, Kameʻeleihiwa (1992) advocates for regaining ʻōlelo Hawaiʻi to reestablish the link to kūpuna

and their wisdom. She asserts that ʻōlelo Hawaiʻi shapes Kanaka ʻŌiwi identity and "allows us to view the world through our ancestor's eyes" (p. 327).

ʻĀina-based organizations like Papahana Kuaola operate where language revitalization, ahupuaʻa[7] restoration, and economic self-sufficiency intersect. Papahana Kuaola is a community-centered ʻāina-based initiative with various programs that connect students to the place of Waipao, ahupuaʻa ʻo Heʻeia, moku ʻo Koʻolaupoko, mokupuni ʻo Oʻahu. Students of Pre-K through 12th grade Hawaiian language immersion schools around Oʻahu visit Waipao as part of their school curricula and all activities are conducted in ʻōlelo Hawaiʻi. Curricula and activities include: Hawaiian geology, human interaction with the Hawaiian environment, wetland ecosystem management, native and introduced plant and animal identification, and mālama ʻāina. (Papahana Kuaola, 2019; Ruelas, Kon, & Nahale-a, 2015).

In recognition that Hawaiian language must be taught and utilized outside the confines of classroom-teaching, the University of Hawaiʻi at Mānoa Kawaihuelani Center for Hawaiian Language and the University of Hawaiʻi Maui College Hawaiian Language program professors continue to create domains for ʻōlelo Hawaiʻi to thrive. Oliveira (2017) describes post-secondary educational efforts to normalize ʻōlelo Hawaiʻi through aloha ʻāina-placed hoʻomoana ʻōlelo Hawaiʻi. According to Oliveira (2017):

> The Mauiakama summer program...was created in 2008 to revitalize ʻōlelo Hawaiʻi by providing participants with an opportunity to speak solely in ʻōlelo Hawaiʻi for a week while engaging in hands-on ancestral Kanaka cultural practices with expert practitioners and native speakers of ʻōlelo Hawaiʻi. Participants are taught about

[7] Beamer (2014) describes ahupuaʻa as "diverse and complex divisions, ranging in size, shape, and geography" (p. 41). Ahupuaʻa usually extended from the land into the ocean and therefore nearly all resources within the boundaries of the ahupuaʻa were available to the common people (Beamer, 2014).

> the history and significance of the places visited. They also engage in hands-on land management practices such as restoring traditional wetland loʻi, cleaning and maintaining ancient irrigation ditches, clearing invasive plants, and rebuilding traditional fishpond walls. In transit around the island, participants listen to audio recordings of native speakers related to the history of the places visited and the cultural practices that those places are known for. What makes this hoʻomoana ʻōlelo Hawaiʻi unique is its focus on engaging in various mālama ʻāina practices. (Oliveira, 2017, p. 6)

Oliveira (2017) suggests, the outcomes of aloha ʻāina-placed hoʻomoana ʻōlelo Hawaiʻi include

- increased language proficiency in ʻōlelo Hawaiʻi among participants,
- the creation of speech communities that share common interest in perpetuating ʻōlelo, Hawaiʻi, ʻike kuʻuna, and Kanaka cultural practices,
- an instilled sense of kuleana in students and the cultivation of future leaders who advocate for the betterment of Kānaka and protection of natural resources,
- the creation of alternative learning environments for students to thrive, and
- an instilled sense of respect for the function and interdependence of all living things through the connection of kānaka to ʻāina (Oliveira, 2017).

For these reasons, utilizing ʻōlelo Hawaiʻi in ʻāina-based programming is crucial. ʻŌlelo Hawaiʻi connects people to the history of specific places in Hawaiʻi by communicating place-specific geographical features. It also reconnects Kānaka ʻŌiwi with the ʻāina, and therefore strengthens cultural identity within Kanaka ʻŌiwi learners.

Hoʻomana

This section describes how ʻāina-based initiatives are focusing on the principle of hoʻomana to help learners understand and respect the mana within all living things including themselves. The principle of hoʻomana is important to ʻāina-based education because the mana inherent in the ʻāina can be acquired by Kānaka ʻŌiwi through the deepening of cultural skills, knowledge, and exercise of kuleana. Hoʻomana represents power, spirituality, reverence, and the ability for Kānaka ʻŌiwi to "open the mutual flow of mana within a relationship" (Goodyear-Kaʻōpua, 2013, p. 208). This inherited and acquired mana can be drawn on to develop innovative socio-cultural structures that improve the well-being of Kanaka ʻŌiwi communities and rebuild community understandings of abundance (Enos, 2015; Maunakea-Forth & Abbott, 2015).

MAʻO Organic Farms (MAʻO) presents a successful model of hoʻomana to rebuild and redefine community wealth (Enos, 2015; Maunakea-Forth & Abbott, 2015). MAʻO is located on the Waiʻanae coast of Oʻahu. This social enterprise and organic farm grows United States Department of Agriculture (USDA) certified organic produce as well as a generation of youth leaders. MAʻO is an acronym for MālaʻAi ʻŌpio. Kamuela Enos, director of social enterprise at MAʻO, refers to this movement as "restoring ancestral abundance" (Enos, 2015). College interns on the Waiʻanae coast work 20-hours a week at the farm while attending college full-time to complete two and four-year degrees. Students receive tuition waivers and monthly stipends while growing organic produce for their families, farmers' markets, and local businesses. After a visit to MAʻO, a makua participant of the Community Learning Exchange: ʻOhana Series[8] reflected on the presence of MAʻO within the Waiʻanae community:

[8] The Community Learning Exchange: ʻOhana Series (CLE) is a community partnership between Kamehameha Schools, MAʻO Organic Farms, and the Institute for Native and Pacific Education and Culture (INPEACE) on the Waiʻanae coast of Oʻahu. Through bi-monthly gatherings, program participants engage in intergenerational activities that seek to increase ʻohana and community engagement through hands-on cultural practice.

> I am grateful to MA‘O for educating our youth by supporting them through college internships, tuition, and employment opportunities. It was meaningful learning about the internship programs that MA‘O provides. It’s teaching the generations to be self-sufficient and encouraging them to better themselves through their culture and education. (Anonymous makua participant[9] in S. P. Maunakea, 2014, p. 6)

This makua acknowledged the value that MA‘O is bringing to her community by equipping youth with the tools to empower themselves. MA‘O interns are not only leaders in their communities, but they serve as mentors to community-driven ‘āina-based initiatives across ka pae ‘āina Hawai‘i. According to Meyer (2014), MA‘O interns and graduates have aided in the development of ‘āina- and community-based programming that serves to ho‘omana lāhui. As programs like MA‘O become more established, they develop new ‘āina-based leadership models that draw upon the mana of their places, stories, and people.

‘Āina Momona

‘Āina momona refers to the abundance of land, watersheds, and oceans. Momona means fat, fertile, or rich as in soil (Pukui & Elbert, 1986). This section describes how ‘āina-based initiatives are using the ancestral principle of ‘āina momona to develop and articulate their programmatic goals. It is an important aspect of ‘āina-based education because it provides a foundation to measure the health of the ‘āina and the impact of ‘āina-based programming.

‘Āina momona has been articulated as the, “long-term goal for biocultural restoration in Hawai‘i that speaks to the productive, healthy, and resilient lands and oceans, including the intimate reciprocal relationships our ancestors had with ‘āina…” (Morishige et al., 2018, p. 5).

[9] This pū‘olo contains quotes from CLE makua and kupuna participants. Their survey responses were anonymous per the research protocol approved by the Institutional Review Board at the University of Hawai‘i at Mānoa. For this reason, the author of the evaluation report in which the quote is found is referenced here and throughout the text.

ʻĀina-based learning at loko iʻa and ʻāina maloʻo are examples of the diverse sites being used to engage learners in this principle of ʻāina momona. Because of the interconnected nature of ahupuaʻa systems, indicators of land health are often assessed through nearby ocean systems. For example, in the ahupuaʻa ʻo Heʻeia, the loʻi restoration efforts of two educational organizations mentioned earlier—Papahana Kuaola and Kākoʻo ʻŌiwi—help to filter water and control sediment that flows into Heʻeia Fishpond. Heʻeia Fishpond is a 600-800 year-old loko iʻa kuapā or walled in fishpond built upon the Malaukaʻa reef[10]. Paepae o Heʻeia's restoration efforts and their Ka ʻAi Kamahaʻo education program offer "various eco-cultural education projects consisting of mālama loko iʻa, place-based knowledge and ecological-based studies that foster values and concepts of traditional fishpond management" (Paepae o Heʻeia, 2019). According to Moehlenkamp et al. (2018), loko iʻa restoration efforts such as removal of mangrove has demonstrated an increase in water quality and amount of water flowing in and out of the fishpond. From uka to kai, all three organizations work together to restore health to their entire ahupuaʻa.

The diverse forms of traditional aquaculture like Heʻeia Fishpond and agriculture practiced prior to western contact present a lens to view how Kānaka ʻŌiwi interacted with their places to cultivate ʻāina momona. In their 2018 study, Lincoln et al. describe the importance of restoration and education efforts on ʻāina maloʻo agricultural lands. ʻĀina maloʻo are diverse forms of dryland and rain fed agricultural systems that historically included "home gardens (kīhāpai), agroforestry (mahi ʻulu lāʻau), intensive dryland farming (mahi ʻai) and a range of other strategies" (p. 3). According to Lincoln et al. (2018), prior to western contact, ʻāina maloʻo systems produced five times the amount of food as did loʻi kalo, especially on younger islands

[10] For more information about Heʻeia Fishpond and Paepae o Heʻeia, see: www.paepaeoheeia.org.

such as Hawai‘i Island and Maui, and were more widespread across ka pae ‘āina Hawai‘i. The authors discuss the bio-cultural restoration efforts of three organizations on Hawai‘i Island—Ulu Mau Puanui, the Maluaka Project, and Māla Kalu‘ulu—using culturally-centered science, service-learning, and field-school techniques to deepen engagement and restore the knowledge systems necessary for ‘āina malo‘o[11]. Lincoln et al. (2018) suggests the following outcomes have emerged from ‘āina malo‘o restoration programming:

> High levels of place-specific knowledge are being uncovered through interdisciplinary and multi-epistemological restoration teams. Understanding agriculture on ‘āina malo‘o broadens the scope of biocultural relationships by engaging a more significant range of crops and therefore [sic] assortment of associated practices. (p. 17)

The authors conclude that because ‘āina malo‘o on Hawai‘i Island formed the economic base for ali‘i of Hawai‘i Island to conquer ka pae ‘āina Hawai‘i, restoration of ‘āina malo‘o systems may parallel larger socio-political movements such as food sovereignty and self-determination efforts (Lincoln et al., 2018).

Communities of people who mālama ‘āina are fed in physical and spiritual ways that restore well-being. In the cyclical process, the ‘āina is nourished and can continue to provide, resulting in an interdependent dynamic of ‘āina momona.

Kuleana

> A place and its people are one and the same. Relationships to land are inseparable from the exercise of *kuleana*. (Vaughan, 2018, p. 124)

[11] For an in-depth description of each of these programs, see: Lincoln, N., Rossen, J., Vitousek, P., Kahoonei, J., Shapiro, D., Kalawe, K., ... & Meheula, K. (2018). Restoration of ‘āina malo‘o on Hawai‘i island: Expanding biocultural relationships. *Sustainability, 10*(11), 3985.

This section describes how ʻāina-based initiatives are providing the setting for learners to deepen their understanding of kuleana. Kuleana is an important aspect of ʻāina-based education because as Vaughan states above, it is through the exercise of kuleana, that people grow a relationship to their place. Kuleana refers to notions of responsibility, privilege, and authority (Pukui & Elbert, 1986). Kuleana is also a small area of land within an ahupuaʻa cultivated by ʻohana (Vaughan, 2018).

According to Vaughan (2018), "*Kuleana* is more than a general ethic of care for the Earth, minimizing your impact wherever you go…*Kuleana* grows from reciprocity: regular return, cultivation of relationship, and active work to nurture abundance" (p. 48). Vaughan's research discusses the stories, cultural practices, and resilience of ʻohana on the northeast coast of Kauaʻi who uphold their kuleana amidst issues such as land dispossession and over-tourism. She describes the origins of the Waipā Foundation and its efforts to mālama the 1,600-acre Waipā ahupuaʻa:

> The Waipā Project began in 1982, when a group of Hawaiian *kūpuna* from Haleleʻa, along with their families and supporters, organized to preserve the Waipā ahupuaʻa from proposed luxury resort development. After four years of negotiations, the landowner, Kamehameha Schools, agreed to lease the land to the group...The *kūpuna* aimed to restore the ahupuaʻa so that it could support a subsistence lifestyle and serve as a *kīpuka* (place of shelter and restoration) for cultural practices. (Vaughan, 2018, p. 121)

Vaughan describes a Waipā program in which fifth- and sixth-grade students from a nearby school came to Waipā once a month for a total of ten field trip visits focused on the topics of

water and agriculture[12]. She found that, "students focus, learn, and retain more in the natural environment than inside the classroom and develop a strong sense of *kuleana* (responsibility) and desire to *mālama* (care for) the Hawaiian culture and *ʻāina* through their participation in the program" (Blaich, 2003, p. iv). The conscientization of kuleana through developing reciprocal relationships between kānaka and the ʻāina is a common finding reported by ʻāina-based initiatives (Hawaiʻi Leadership Forum, 2019). Goodyear-Kaʻōpua (2013) also provides insights on kuleana as a powerful method of inquiry, teaching, and learning in contemporary Hawaiian education. She states:

> The work of rebuilding the ʻauwai and loʻi that carry water to and shelter Hāloa aims not only to ground learning in math, science, social studies, and language but also to root students in an ethics of kuleana—a notion of responsibilities, authority, and rights that are tied to one's positionality in relation to place, genealogy, and effort put forth in knowledge acquisition/production. (Goodyear-Kaʻōpua, 2013, p. 133)

In this excerpt, Goodyear-Kaʻōpua describes how restoring and caring for the loʻi was a means not only to bring relevance to academic subjects but to ground students in their kuleana. Evident in Vaughan's and Goodyear-Kaʻōpua's research is the importance of continued reciprocal relationships between kānaka and the ʻāina through the development and practice of kuleana.

Aloha ʻĀina

Aloha ʻāina expresses an unswerving dedication to the health of the natural world and a staunch commitment to political autonomy, as both are integral to a healthy

[12] For an in-depth description of the year-long integrated program developed by the author, Waipā staff, and the classroom teacher, see: Blaich, M. (2003). *Mai uka a i kai: From the mountains to the sea ʻāina-based education in the ahupuaʻa of Waipā* (Unpublished master's thesis). University of Hawaiʻi at Mānoa, Honolulu.

> existence. Although it is often imperfectly translated as both "love for the land" and "patriotism," the *aloha* part of this phrase is an active verb, not just a sentiment. As such, it is important to think of aloha ʻāina as a practice rather than as merely a feeling or belief. (Goodyear-Kaʻōpua, 2013, p. 32)

This section describes how ʻāina-based initiatives embody the practice of aloha ʻāina. Aloha ʻāina is an important aspect to ʻāina-based education because it simultaneously expresses a commitment to the health of the ʻāina as well as the right to assert sovereignty in order to ensure the longevity of ecosystems.

The political discussion of aloha ʻāina includes notions of Hawaiian nationalism. Enacting sovereignty means resisting policies and actions that disenfranchise Kānaka ʻŌiwi or undermine their ability to care for their places. According to Silva (2004), "Kanaka Maoli who worked to retain the sovereignty of their own nation called themselves "ka poʻe aloha ʻāina" (the people who love the land)" (p. 131). Ka Hui Aloha Aina was formed in 1893 in resistance to the illegal overthrow of the Hawaiian government by American businessmen aided by United States military forces. The men's branch was led by Joseph Nawahi and the woman's branch, Hui Hawaii Aloha Aina o Na Wahine, was led by Mrs. Abigail Kuaihelani Maipinepine Campbell. For Joseph Nawahi and the poʻe aloha ʻāina, aloha ʻāina meant that "people must strive continuously to control their own government in order to provide life to the people and to care for their land properly" (Silva, 2004, pp. 141-142). Thus, the concept of aloha ʻāina is simultaneously expressed as a Hawaiian belief system, political activism, and more recently by ʻāina-based initiatives, as a vessel for healing and re-envisioning a better future for kānaka and the ʻāina.

Amongst programming endeavors that use ʻāina-based pedagogies, a commonly reported outcome is a sense of healing that arises through the practice of aloha ʻāina. According to the restoration coordinator at Loko Ea Fishpond[13], people who come to help at the fishpond say that the place has become a sanctuary for them. People come together and help remove invasive species of grass and also replant native plant species. In return, they leave feeling rejuvenated and energized to complete their everyday responsibilities. The restoration coordinator also reported that he himself feels a sense of healing when he comes to work, "When I come here, there is no stress, this is a healing place" (I. Lum, personal communication, December 14, 2018).

Another site on Oʻahu, Hoʻoulu ʻĀina, is a service of Kokua Kalihi Valley[14] that exists as a "welcoming place of refuge where people of all cultures sustain and propagate the connections between the health of the land and the health of the people" (Hoʻoulu ʻĀina, 2019). The Hoʻoulu ʻĀina website states:

> Since 2004, Kokua Kalihi Valley (KKV) has been stewarding and sustainably developing 100 acres in the back of Kalihi Valley. Dedicated to cultural education and community transformation, this land was named Hoʻoulu ʻĀina, meaning "to grow the land" and "to grow because of the land," based on the value that the health of the land and the health of the people are one. (Hoʻoulu ʻĀina, 2019)

Hoʻoulu ʻĀina offers weekly ʻāina-based activities to the public such as organic reforestation, organic farming, lei making, hale building, and more. At Hoʻoulu ʻĀina, community transformation lives in the healing practice of aloha ʻāina and in the community of people that come together for such purposes (Baker, 2018).

[13] For more information about Loko Ea, see: www.lokoea.org
[14] For more information about Hoʻoulu ʻĀina, see: www.hoouluaina.com

From a place of healing where ʻāina and kānaka exist interdependently, Kānaka ʻŌiwi are able to envision a better future for themselves. A powerful representation of envisioning through the practice of aloha ʻāina occurred in the summer of 2018 when youth ranging in age from 17-24 from Oʻahu, Hawaiʻi Island, and Kauaʻi gathered for the third Hoʻōla ʻĀina o Māʻilikūkahi Food Sovereignty Congress[15] at MAʻO Organic Farms. The five-day gathering "encouraged youth participants to share their stories and ultimately express their collective vision for their food, communities, education, and future" (Youth Food Sovereignty Congress, 2018, p. 2). Nearly 50 youth delivered the following declaration at the 2018 National Sustainable Agriculture Education Conference hosted by UH West Oʻahu and West Oʻahu communities:

WE THE YOUTH ENVISION A FUTURE OF HOʻŌLA ʻĀINA,

Where our policies and actions are centered around self-sufficiency,

sustainability, and public health.

Where we are educated in health and lāʻau (traditional cultivars),

and food is grown with aloha by our hands on our

ʻāina (land that feeds), because food is medicine.

Where we will have aloha ʻāina-based curriculum perpetuated through

all education systems that includes growing, preparing, and consuming local,

sustainable, organic, and restorative food.

Where students of different school systems collaborate, organize and activate an

educated and aware community to provide their own

sources of food, derived from the many cultures that inhabit our islands.

Where communities have sovereignty over all land and water

[15] For more information on the goals and outcomes of the Hoʻōla ʻĀina o Māʻilikūkahi Food Sovereignty Congress, see: www.youthfoodsovereignty.com/.

resources to grow food and educate youth to benefit

our communities and future generations.

Because we the kanaka have the right

and the kuleana (responsibility and privilege) to

ʻai pono (righteous food), healthy bodies, minds, souls, and ʻāina.

Because we the kanaka have the right and the kuleana to

make a difference that will bring back our independence.

Because we the kanaka have the right and the kuleana to

education that is not confined to a classroom.

Because we the kanaka have the right and the kuleana to

co-design our education.

Because we the kanaka have the right and the kuleana to

a food system that uplifts all communities.

Because we the kanaka have the right and the kuleana to

conscience cultivation for the future.

Because we the lāhui (community) have the right and the kuleana to

govern our resources that will provide for ourselves,

our children, and our children's children.

E Ola! (Life!) (Youth Food Sovereignty Congress, 2018, p. 2)

The youth were met by a standing ovation by community members, farmers, academics, and government leaders. U.S. Representative Tulsi Gabbard, also deeply moved, extended her commitment to responding to their demands on the federal level. The coming together of youth throughout ka pae ʻāina Hawaiʻi was an act of aloha ʻāina and an example of what can happen

when communities throughout ka pae ʻāina Hawaiʻi who love their ʻāina gather to co-construct a vision of a sovereign and pono future.

Mauli Ola

I ola ʻoe, i ola iaʻu nei[16]

You live in me, and I live in you

Ka lā i ka Mauliola[17]

The sun at the source of life

I paʻa ke kino keiki i ka lāʻau[18]

That the body of the child be solidly built by the medicines

This section describes how ʻāina-based initiatives are improving the health of their communities by engaging in the ancestral principle of mauli ola. Mauli ola is a concept of well-being that embraces physical and spiritual facets of holistic health. Mauli ola is an important aspect of ʻāina-based education because interdependent person-environment relationships are inherent in Kanaka ʻŌiwi well-being (Vaughan, 2018).

As exemplified in the three ʻōlelo noʻeau above, the first ʻōlelo noʻeau, "I ola ʻoe, i ola iaʻu nei" (Kealiikanakaoleohaililani & Giardina, 2016, p. 58), describes a Hawaiian worldview of the importance of balanced natural ecosystems that provide basic needs for human survival such as food, water, and shelter. Healthy food is dependent on fertile soil and the availability of fresh water is dependent on the biodiversity and health of native forests.

[16] Kealiikanakaoleohaililani, K., & Giardina, C. P. (2016). Embracing the sacred: an indigenous framework for tomorrow's sustainability science. *Sustainability Science*, *11*(1), 57–67.
[17] Pukui, M. K. (1993). *ʻŌlelo noʻeau: Hawaiian proverbs & poetical sayings*. Honolulu, HI: Bishop Museum Press.
[18] Koʻomoa, D-L. T., & Maunakea, A. K. (2017). Linking Hawaiian concepts of health with epigenetic research: Implications in developing indigenous scientists. In W. K. M. Lee, & M. Look (Eds.), *Hoʻi hou ka mauli ola: Pathways to native Hawaiian health (pp. 120-135)*. Honolulu, HI: University of Hawaiʻi Press.

The second ‘ōlelo no‘eau, “Ka lā i ka Mauliola” (Pukui, 1993, p. 154), further points to the importance of the sustaining force of nature’s elements such as the sun, water, and soil. Mauliola is a Hawaiian god of healing and health (Pukui, 1993; Pukui & Elbert, 1971; Gutmanis, 1995). Hawaiian spirituality recognizes these elements as kinolau or physical forms of akua. For example: Kaneonohiakala (eye of the sun), Kanewaiola (sunlight; fresh water; flowing water as in streams), Kanaloa (ocean; ocean winds), Papa (earth), and Lono (rain clouds; thunder; lightning; agriculture), Ku (as Kumauna of the forests and mountains), and Hina (moon)[19]. The spiritual acknowledgement of akua is critical in constructing an understanding of well-being. Kamaka, Wong, Carpenter, Kaulukukui, & Maskarinec (2017) find that the balance of three distinct realms—gods/higher powers (akua), nature/environment (‘āina, moana, lani), and humankind (kānaka) is a construct of holistic health from a Hawaiian perspective.

The third ‘ōlelo no‘eau, “I pa‘a ke kino keiki i ka la‘au” (Ko‘omoa & A. K. Maunakea 2017, p. 124), describes the importance of strengthening a child’s body with lā‘au during pregnancy and the nursing stages of a baby’s growth to condition the prenatal environment and “aid in the prevention of adult-onset diseases” (Ko‘omoa & A. K. Maunakea, 2017, p. 124). Gutmanis (1995) describes how the young leaves of the popolo, kalo, ‘uala, and ‘akiohala, and the blossom of the hibiscus were added to the diet of the mother to strengthen the body of the child. These three ‘ōlelo no‘eau are evidence that Kānaka ‘Ōiwi possess a holistic understanding of the role of larger natural ecosystems (i.e. native forest systems) and the role of healthy intimate environments (i.e. the practices a family creates during pregnancy and the early years of

[19] This is a very limited example used to describe some of the akua Hawai‘i associated with the ‘ōlelo no‘eau listed above. For more information about akua, see: Handy, E. S. C, & Pukui, M. K. (1972). *The Polynesian family system in Ka-‘u, Hawai‘i*. Rutland, VT: Charles E. Tuttle, and Pukui, M. K., & Elbert, S. H. (1971). *Hawaiian dictionary: Hawaiian-English, English-Hawaiian:* (2nd ed.). Honolulu, HI: University of Hawaii Press.

a child's life to strengthen the bodies of the mother and keiki) for the long-term well-being of Kānaka ʻŌiwi and future generations (Kaholokula, 2017; Koʻomoa & A. K. Maunakea, 2017).

The concept of holistic well-being is reflected in the principle of mauli ola, possibly in reference to Mauliola, the akua of health. Kaholokula (2017) defines mauli ola as:

> A "balanced" state of spiritual, physical, mental, and social well-being beyond the mere absence of disease or disability. These aspects of well-being are related to the quality of a person's spiritual, interpersonal, and environmental relationships as reflected in the traditional Kanaka ʻŌiwi values around hoʻomana, ʻohana, mālama ʻāina, and aloha ʻāina. The optimal balance amongst these areas of well-being is based on a person's subjective experience, and this optimal balance can differ across Kānaka ʻŌiwi. (p. 3)

Kaholokula (2017) examines the historical and social determinants of mauli ola such as depopulation from infectious diseases in the early 1800s, indoctrination of western ideology and customs, privatization and dispossession of land, the illegal overthrow of the Hawaiian government in 1893, and the continued U.S. occupation and governance which has resulted in historical trauma[20], negatively affecting the mauli ola of Kānaka ʻŌiwi (W. K. M. Lee & Look, 2017). However, collaboration between aliʻi trusts[21], state agencies, and community

[20] Kaholokula, J. K. (2017) defines historical or cultural trauma as "the cumulative emotional and psychological wounding caused by traumatic experiences that extend over an individual's life span that is transmitted from one generation to the next" (pg. 15). For discussion on historical trauma from a Hawaiian lens, see: Lee, W .K. M. & Look, M. (Eds.). (2017). *Hoʻi hou ka mauli ola: Pathways to native Hawaiian health.* Honolulu, HI: University of Hawaiʻi Press.

[21] The following four trusts were created towards the end of the 1800s by aliʻi to serve Kānaka ʻŌiwi in perpetuity: Bernice Pauahi Bishop Estate, now Kamehameha Schools for education; the Queen Liliʻuokalani Trust for the care of indigent children; the King William Charles Lunalilo Trust for the care of impoverished elderly; and the Queen Emma Trust for medical care. According to Poai & Serrano, "The creation of these trusts suggest that the aliʻi continued to understand and attempted to fulfill their obligation to provide for the needs of the people" (p. 1171).

organizations are working to address historical trauma by utilizing Hawaiian approaches to well-being and education and by supporting community-driven ʻāina-based initiatives.

Beamer (2013) discussed lessons learned from one of these collaborative ʻāina-based initiatives, the First Nations' Futures Program, which brought together a cohort of Kanaka ʻŌiwi and Māori fellows. The program focused on values-based indigenous leadership and resource management. The program connected "fellows to ʻāina and community leaders, through service learning, talk-story sessions, and a yearly Hawaiʻi-focused project" (Beamer, 2013, p. 61). According to Beamer (2013), learners in ʻāina-based programs like the First Nations' Futures Program have the "opportunity to practice servant leadership, service to community, and reconnect to ʻāina in holistic ways that unify the physical, emotional, and spiritual aspects of being ʻŌiwi" (p. 60). Kanaʻiaupuni & Malone (2006) also indicate that Hawaiian culture-based education and place-based education like the First Nations' Futures Program strengthens Kanaka ʻŌiwi well-being, "Connections to the land create the space for Native Hawaiians to maintain traditional practices that nourish spiritual, physical, and educational well-being" (Kanaʻiaupuni & Malone, 2006, p. 298).

Concerning physical health, ʻāina-based initiatives like MAʻO Organic Farms (MAʻO) prove to lower the risk of Type 2 diabetes amongst participants by way of farming, exercise, and nutrition (A. K. Maunakea & Juarez in Oshiro 2019). In a two-year study with the University of Hawaiʻi, MAʻO youth interns participated in ground-breaking research that measured participants' body-mass index, blood pressure, blood sugar level, and beneficial and detrimental bacteria that live in the human gut. The study also measured the social impact of being a MAʻO youth intern by examining the influence MAʻO interns have on their immediate family and

community[22]. Amongst interns, the data reveals an increase of a type of gut-bacteria associated with lower inflammation and a decreased risk of diabetes due to a diet high in fiber. Results from the study show that MA‘O youth interns were eating healthier, 60 percent of them significantly reduced their risk of Type 2 diabetes, and in terms of health care, MA‘O directly saved $120,000 in health care costs. A. K. Maunakea and Juarez conclude that ‘āina-based initiatives like MA‘O provide a pathway to Type 2 diabetes prevention and preventative health care. They claim, “Data shows that ‘āina-based programs that put people back on the land using a Hawaiian cultural perspective—to live in an ecosystem that’s healthier for the environment and for the people—demonstrate clear economic and health benefits” (Oshiro, 2019, pp. F6-F7). Overall, A. K. Maunakea and Juarez’s research has significant implications for ‘āina-based programs that utilize cultural practices to improve the health and well-being of their communities.

‘Ike Kupuna

This section describes how ‘āina-based initiatives are reclaiming the use of ‘ike kupuna to foster connections between learners and the ‘āina, as well as generating enthusiasm for learning. ‘Ike kupuna is an important aspect of ‘āina-based education because intergenerational knowledge describes the unique characteristics and balanced relationships of each place. The word ‘ike kupuna refers to knowledge of elders and ancestors. Kanahele (2005) affirms the need to seek ancestral knowledge. She writes:

> We have to pay attention to our Hawaiian native intelligence and experiences. We should be able to look for them, define them—because nothing is lost. In fact, we still have a lot of knowledge that was left to us by our ancestors. It’s still there; we just have to go and look for it. (p. 27)

[22] For more information on the University of Hawai‘i and MA‘O Organic Farms study, see: mauliola.net.

Indeed, knowledge from kūpuna is alive in the ʻāina as well. hoʻomanawanui (2008) uses the term ʻike ʻāina to refer to ancestral knowledge acquired through learning from the land. To further expound upon ʻike kupuna and ʻike ʻāina, Veincent (2016) uses the concept of ʻike mauli to articulate the uniqueness of a place:

> *ʻIke mauli* is the foundational knowledge that is passed from one generation to another within a community as a way of securing one's own identity to family, community, and land. *ʻIke mauli* sets forth traditional knowledge that provides the needed connection to new knowledge introduced. (p. 6)

Therefore, ʻike- kupuna, ʻāina, and mauli connect with place-specific intergenerational knowledge and skills passed down from one generation to the next as a means to revive customary practices, restore models and systems of the past, connect with our kūpuna and places, and negotiate the use of new knowledge (Beamer, 2014; hoʻomanawanui, 2008; McGregor, 2006; Oliveira, 2014; Veincent, 2016; Young, 1998).

Incorporating ʻike ʻāina in ʻāina-based education helps learners understand themselves in relation to their surroundings. In her article, hoʻomanawanui (2008) discusses a week-long field trip to Hawaiʻi Island with a University of Hawaiʻi at Mānoa cohort of student teachers focusing on incorporating a cultural approach to education. hoʻomanawanui found:

> Through direct experience on the ʻāina and incorporating that in their writing process, haumāna gained a clearer understanding how our kūpuna related to the ʻāina...It also allowed them to better understand how to create their own forms of ʻIke ʻĀina for their students, and to inspire their haumāna to be culturally literate. (hoʻomanawanui, 2008, p. 227)

By incorporating ʻike ʻāina, hoʻomanawanui concluded:

> We need to incorporate ʻāina, and learning from ʻāina, not just about ʻāina (and not just in science classes)...(A)n indigenous view of literacy that is ʻāina-based that fosters a sense of connection between ʻāina and haumana as reader, writer, and ʻohana is important. (hoʻomanawanui, 2008, p. 238)

hoʻomanawanui's research illustrates the importance of fostering connections between students and the ʻāina to approach literacy from an indigenous perspective.

In another example of the use of ʻike kupuna in ʻāina-based education, Akana (2013) describes his experience as a Hawaiian immersion teacher witnessing a native speaker of ʻōlelo Hawaiʻi, Kupuna Elizabeth Kauahipaula, teaching his second-grade students traditional food processing skills. Akana was presenting a unit on the moʻolelo of Māui and how he secured the secret of fire. Kupuna Kauahipaula joined the class to teach students eight different ways to cook food using a similar method used by the mud hens in the moʻolelo—with both ʻaunaki and ʻaulima, a traditional trough and plow for fire making, made from the hau plant. Akana (2013) states:

> The children were thoroughly excited and enthused about trying to ignite a fire using the fire trough and plow…To further enhance the children's experience with fire making, Kupuna taught the children how to clean and wrap fish in *tī* (cordyline terminalis) leaves for cooking on coals. She also showed them how to cook sweet potatoes in the ashes from the coal fire. Thus, this traditional cooking curriculum provided another authentic learning experience for the children. They learned the fire cycle in science and the traditional methods of cooking: (a) in the flames; (b) on heated rocks; (c) in an underground oven; (d) on coals; (e) wrapped in leaves

and placed on coals; (f) boiled in water heated by coals; (g) food stuffed with heated rocks; and, (h) on ashes. By using all elements and products of fire, the students learned about the Hawaiian use and conservation of energy.

Although we experimented with photovoltaic cells and a solar cooker, the traditional trough and plow generated the most enthusiasm for learning as expressed in their excited leo, "Hō, ka paʻakikī! Hō, how hard" or "Hō, ka leʻaleʻa! Hō, how fun!" (pp. 37-38)

In this excerpt, Akana (2013) describes how ʻike kupuna is being incorporated in the classroom setting to generated enthusiasm for learning. ʻĀina-based pedagogies provide an environment where the transfer of ancestral knowledge and customs can take place in an engaging way for students.

Moʻolelo

This section describes how ʻāina-based initiatives are reclaiming the use of moʻolelo to strengthen relationships between kānaka and ʻāina. Moʻolelo is an important aspect of ʻāina-based education because the transmission of traditions and stories is essential to Kanaka ʻŌiwi identity and connection to place (Oliveira & Wright, 2016). The word moʻolelo refers to stories, traditions, literature, and historical accounts.

The word moʻolelo comes from the words moʻo and ʻōlelo meaning a "succession of talk" since stories were transmitted from generation to generation by speech prior to western contact (Pukui & Elbert, 1986). Moʻolelo describe features of people, places, and time periods of Hawaiʻi. Hawaiian scholars have compiled, studied, and analyzed many of the moʻolelo found in the Hawaiian language newspapers and have made them accessible to the public through

searchable databases such as ulukau.org (Akana, 2013). These resources have helped educators design relevant place-specific curricula for their students.

The ʻEwa ʻĀina Inventory is one of these repositories of moʻolelo specific to the ʻEwa moku, Oʻahu. Nohopapa Hawaiʻi, a cultural resource management firm, in partnership with Kamehameha Schools ʻEwa Region developed the ʻEwa ʻĀina Inventory—an interactive "synthesis of historical research, ethnographic information, wahi pana data, and the current stewardship and restoration efforts taking place in the moku to create a richer understanding of ʻEwa's historical and contemporary cultural landscape" (Nohopapa Hawaiʻi, 2019). The ʻEwa ʻĀina Inventory contains moʻolelo of the 14 ahupuaʻa in ʻEwa. The content provides cultural practitioners and classroom teachers with materials to co-design ʻāina-based curricula and educational opportunities for learners in the ʻEwa region (Kamehameha Schools, 2019).

The oral and written stories and histories of specific land areas help learners understand the geographical and cultural features of a place. In locations where development and urbanization has altered the geographical landscape, moʻolelo provide a tool to revive the cultural landscape. For example the land division of Kānewai within the ahupuaʻa ʻo Waikīkī, moku ʻo Kona, mokupuni ʻo Oʻahu contains Ka Papa Loʻi ʻo Kānewai, an ancient loʻi system. The loʻi kalo was restored in the 1980s by a group of Hui Aloha ʻĀina Tuahine Hawaiian language club students—later known as Hoʻokahe Wai Hoʻoulu ʻĀina—guided by kūpuna such as Harry Kunihi Mitchell of Keʻanae-Wailuanui, Maui. Ka Papa Loʻi ʻo Kānewai is a sanctuary, a community-driven grassroots organization, and a department within the Hawaiʻinuiākea School of Hawaiian Knowledge at UHM that cares for endemic species of taro and offers college-level courses on traditional taro farming practices (S. P. Maunakea, 2016). Upon visiting this ʻāina site, learners listen to moʻolelo about the history of the place prior to human arrival when Kāne

and Kanaloa, two of the main akua Hawai‘i, created a fresh water spring there. Contemporary stories are also told which include ali‘i visiting the healing waters of Kānewai, the restoration efforts of the lo‘i kalo, and the building of the hale wa‘a led by Uncle Clay “Cap” Bertelmann of the Makali‘i crew—a voyaging canoe in Kawaihae on Hawai‘i island. Mo‘olelo help learners construct a historical understanding of Kānewai so when they clear the stream of leaves and debris, they see themselves as part of the living mo‘olelo of the place. The learners become a part of the narrative, as they help continue the flow of water from the mountains, through the land, and out to the ocean.

In addition to the transmission of mo‘olelo pertaining to land, the perpetuation of family stories allows family members to take pride in who they are and where they come from. Collaborations amongst ‘āina- and community-based organizations and educational institutions have created spaces for intergenerational community education such as the Community Learning Exchange: ‘Ohana Series mentioned earlier. Program evaluations reveal an increase in family engagement and transmission of ‘ohana stories and traditions. A kupuna participant offers this thought, “The wealth of the Wai‘anae Coast—Nānākuli, Mā‘ili, Wai‘anae, Mākaha—resounds in the whispers of the kūpuna. Power in our mo‘okū‘auhau, in our plants, in our lāhui. We must continue to pass this ‘ike on to the keiki, with aloha” (Anonymous kupuna participant in S. P. Maunakea, 2014, p. 9). Another makua participant mentions, “I will use my stories to continue the teaching of my kūpuna to share the rich history of our people, to perpetuate the ‘ike and culture of our moku, planting seeds that will build a foundation for our keiki to be ha‘aheo of who they are and where they come from” (Anonymous makua participant in S. P. Maunakea, 2014, p. 10).

Nāone (2008) also finds that hands-on ʻāina-based learnings encourage families to share their stories. In a case study of Keiki O Ka ʻĀina, a community-centered initiative in Kalihi Valley on the island of Oʻahu, approximately 40 ʻohana attended 12 sessions of planting native plants. She articulates the following findings:

> This process helped children build brain connections necessary for higher level thinking skills, empowered families culturally, passed on cultural ʻike for further perpetuation, reified the importance of listening to the stories of kūpuna and oral tradition, built community relationships, fostered family relationships, nurtured the land, helped to ensure that native plants that are endangered in their natural environment will have a chance to survive and physically connected families to that specific place. (Nāone, 2008, p. 193)

ʻĀina based programs like Ka Papa Loʻi ʻo Kānewai, Community Learning Exchange: ʻOhana Series, and Keiki O Ka ʻĀina provide settings where moʻolelo pertaining to ʻāina and ʻohana can be spoken and preserved intergenerationally. Moʻolelo contain characteristics and teachings specific to places and people. Through the transmission of moʻolelo, people feel connected to their place and each other which cultivates a sense of belonging and community.

ʻOhana

This section describes how ʻāina-based initiatives are reclaiming the ancestral structure of the ʻohana. ʻOhana is an important aspect of ʻāina-based education because it is a means to build self-sufficient community-based food systems. ʻOhana signifies family or community and is often translated as "offshoots of the family stalk" in reference to the ʻohā or offshoots of the kalo plant (Handy & Pukui; 1972).

Handy and Pukui (1972) describe the role of ʻohana as a means for communal self-sufficiency. Prior to western contact, economic life revolved around the ʻohana. In the ancient days, ʻohana lived both inland, which was referred to as ko kula uka, and near the shore or ko kula kai. Through voluntary giving, ʻohana residing by the shore would give ʻohana living inland fish, seaweed, shellfish or whatever was needed. In return, ʻohana of ko kula kai received goods of the uplands such as kalo, bananas, wauke, olonā, and other resources (Handy & Pukui, 1972). The authors conclude that ʻohana still exists as a viable unit amidst social change and challenges society to reinstate ʻohana as a means for economic sufficiency in modern Hawaiʻi.

From a Native American context, Cajete (1994) articulates the ingenuity of Indian people displayed in the construction of sustainable economic systems around the community that are relatively harmonious with their natural surroundings. He states, "In all Indian communities, material wealth, land, and service (labor) were communally shared to ensure that every member of the community was cared for. This form of economics was an ecological necessity that formed the foundation of long-term serviceability" (p. 214). Reclaiming the ʻohana as a viable unit for self-sufficiency is a means toward achieving such long-term serviceability.

Native American scholar Jeff Corntassel uses the term sustainable self-determination—a concept that advocates for the teaching of sustainable indigenous food production within educational initiatives as a foundation for self-determination and well-being (Corntassel, 2008). According to Goodyear-Kaʻōpua (2013), ʻāina-based pedagogies like Hālau Kū Manaʼs Papa Loʻi Project work toward sustainable self-determination because they disrupt "the hegemonic notion that only a globalized market economy dominated by transnational corporations can provide for our needs" (p.128). Goodyear-Kaʻōpuaʼs research highlights the role of ʻāina-based

pedagogies to engage politically and address socio-economic structures that marginalize Kānaka ʻŌiwi.

In addition to ʻohana serving as a framework to strengthen Kanaka ʻŌiwi efforts toward self-sufficiency, ʻohana also includes the network of community resources and funders that support each other in biocultural restoration and education efforts. Community organizers and partners such as Kamehameha Schools, the Department of Education Office of Hawaiian Education (OHE), Hauʻoli Mau Loa Foundation, Consuelo Foundation, Kōkua Hawaiʻi Foundation, KUPU, Kuaʻāina Ulu ʻAuamo (KUA) Hawaiʻi, Hawaiʻi Alliance for Community Based Economic Development (HACBED), and Castle Foundation, to name a few, are critical in helping leaders of ʻāina-based organizations set up long-term, and sustainable program structures. When the principle of ʻohana is applied in ʻāina-based initiatives, it provides communities the ability to share resources and develop self-sufficient systems.

Conclusion

The knowledge base presented here explores the pedagogy and outcomes of ʻāina-based education in the context of ten ancestral principles. Research done on the impact of ʻāina-based education in the early 2000s can be summarized as connecting kānaka to ʻāina and reviving ancestral values and practices. In recent years, ʻāina-based programming has reflected ʻŌiwi agency (Beamer, 2014) as communities employ ʻāina-based pedagogies to create change. ʻĀina-based programs articulate themselves as

- "new age konohiki" (W. K. Lee, 2014),
- a means to disrupt hegemonic economic and social structures (Goodyear-Kaʻōpua, 2013),
- a means to bring relevance and meaning to academic subjects (Hawaiʻi Leadership Forum, 2019; Ledward, 2013), and

- social entrepreneurship through the growth of leaders and reconstruction of native food economies (Enos, 2015; Lincoln et al; 2018; Maunakea-Forth & Abbott, 2015).

This exploration of ʻāina-based educational research in the framework of ancestral ʻŌiwi principles may aid Kānaka ʻŌiwi in defining for themselves the critical components of their place-specific ʻāina-based programming. It may also help program developers and educators understand the context in which learning and teaching from the ʻāina are situated. In doing so, moʻokūʻauhau, ʻōlelo Hawaiʻi, hoʻomana, ʻāina momona, kuleana, aloha ʻāina, mauli ola, ʻike kupuna, moʻolelo, and ʻohana—among other ancestral principles deemed important to each community—can be thoughtfully considered in ʻāina-based programming.

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PŪ‘OLO TWO

ARRIVING AT AN ‘ĀINA ALOHA RESEARCH FRAMEWORK: WHAT IS OUR KULEANA AS THE NEXT GENERATION OF ‘ŌIWI SCHOLARS?

Introduction

I include my published book chapter (Maunakea, 2016) because it introduces a research framework that reflects the two overarching themes of my dissertation. Specifically,

- the value of ‘āina-based education across diverse learning environments including natural ecosystems, regenerative community food systems, ‘ohana and community life, and academic institutions, and
- the agency of collaborative community efforts and educational entities to reestablish the importance of reciprocal relationships between people and their places through the platform of ‘āina-based education.

‘Āina-based Education Across Diverse Learning Environments

Ka Papa Lo‘i ‘o Kānewai is a sanctuary, a lo‘i system that dates back to the 14th century, a community-driven grassroots organization, and a department within the UHM Hawai‘inuiākea School of Hawaiian Knowledge that offers college-level courses on ancestral taro farming practices. This setting provides Pre-K to kūpuna learners with a direct connection to the ‘āina and the opportunity to engage in reciprocal relationships with the ‘āina through cultivating endemic varieties of taro—while at the same time being associated with the western academic framework of a Research I institution. When examined through the lens of ‘Ōiwi agency, Ka Papa Lo‘i ‘o Kānewai is a vessel for Kānaka ‘Ōiwi to rediscover and claim the use of ancestral knowledge, language, and practices in everyday life (ho‘omanawanui, 2014). Stewart-Harawira (2005) elaborates:

> The traditional principles of traditional knowledge...remain fixed and provide the framework within which new experiences and situations are understood and given meaning. As such, these principles are the means by which cultural knowledge becomes remade and given meaning in our time. (p. 155)

In this chapter, I drew on traditional principles (mālama ʻāina, laulima, and puʻuhonua) to serve as analysis tools to reveal the salient themes of two separate interviews I conducted with ʻāina aloha researchers and practitioners Dr. Davianna McGregor and Dr. Jonathan Osorio. These interviews focused on the evolution of their research methodology within Hawaiian communities and the key lessons learned throughout their careers that could help guide new researchers and academics in their own careers in the field. I found that by using these principles as a lens to examining McGregor and Osorio's beliefs and practices, as well as my own beliefs and practices, I could facilitate conversations with my peers about our roles in academia as the next generation of Kanaka ʻŌiwi scholars.

ʻĀina-based Education and Reciprocal Relationships

For indigenous peoples, reciprocity with the land is central to our health and well-being. It is also central to the health and well-being of the land. Australians Together (Updated March 2019)[32] explains that

> the relationship between many Indigenous people and the land is one of reciprocity and respect—the land sustains and provides for the people, and the people sustain and manage the land through culture and ceremony. Because of this close connection, when the land is disrespected, damaged or destroyed, this can have real impact on the wellbeing of Indigenous people.

[32]Australians Together. (2019, March). The importance of land. Retrieved March 10, 2019, from https://australianstogether.org.au/discover/indigenous-culture/the-importance-of-land/

and, further

> For many Indigenous people, land relates to all aspects of existence—culture, spirituality, language, law, family and identity. Rather than owning land, each person belongs to a piece of land which they're related to through the kinship system. That person is entrusted with the knowledge and responsibility to care for their land, providing a deep sense of identity, purpose and belonging. (Australians Together, 2019)

My relationship with Ka Papa Loʻi ʻo Kānewai, a place that has guided me in the development of my ʻĀina Aloha Research Framework (Maunakea, 2016), is best described as reciprocal. For example, once while weeding the ʻauwai with fourth grade students, Ka Papa Loʻi ʻo Kānewai presented a hōʻailona that helped me understand the foundational values originally established to guide the purpose of the place—mālama ʻāina, laulima, and puʻuhonua—as an approach to conceptualize, conduct, and disseminate research. Reciprocity, then, as it relates to ʻāina-based education at Ka Papa Loʻi ʻo Kānewai has been central to the writing of this chapter—the ʻāina responded with a hōʻailona that guided this publication.

The ʻĀina Aloha Research Framework has evolved as a result of numerous intergenerational discussions about Kanaka ʻŌiwi research perspectives and practices.

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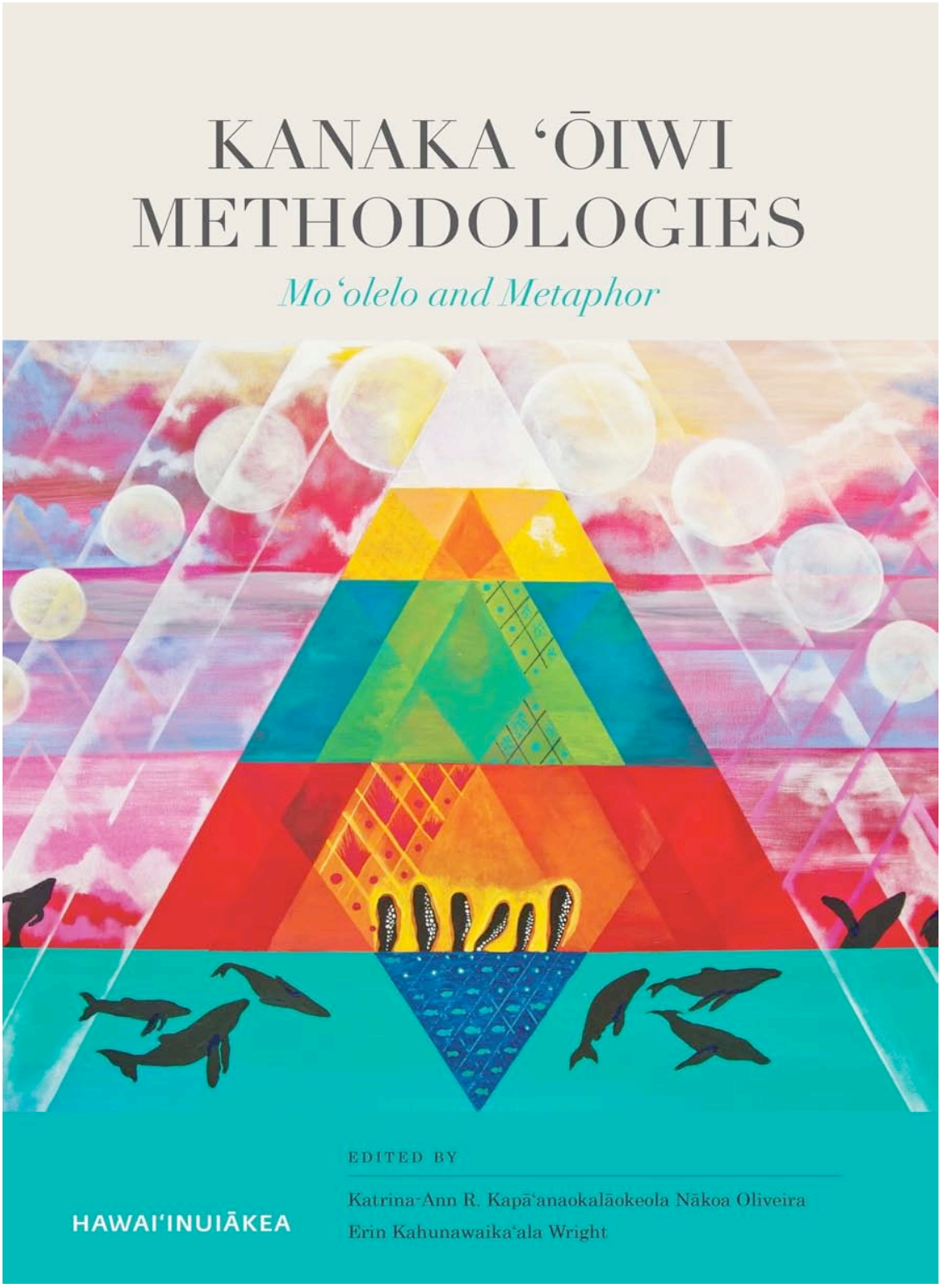

Figure 2. Book cover of Kanaka ʻŌiwi Methodologies: Moʻolelo and Metaphor

Hawai'inuiākea No. 4

Kanaka ʻŌiwi Methodologies
Moʻolelo and Metaphor

Edited by
Katrina-Ann R. Kapāʻanaokalāokeola Nākoa Oliveira
and Erin Kahunawaikaʻala Wright

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Contents

Arriving at an ʻĀina Aloha Research Framework: What Is Our Kuleana as the Next Generation of ʻŌiwi Scholars?

Summer Puanani Maunakea

I would like to acknowledge and thank Drs. Davianna Pōmaikaʻi McGregor and Jonathan Kay Kamakawiwoʻole Osorio. I had the pleasure of interviewing these scholars as they helped me describe and construct what I understand to be research methodology rooted in ʻike kupuna—ancestral knowledge. Anyone who has learned from or been inspired by these kumu knows how important it is to put into action the knowledge that has been imparted to us. To the reader, please understand that I do not intend any disrespect by paraphrasing or selecting excerpts from the interviews conducted with these scholars. Rather, my manaʻo has been shaped and guided by the entirety of their narratives and comes from a place of deep respect. Also, please consider the English explanations that follow Hawaiian phrases as my clearest attempt to communicate enduring concepts that have been spoken and taught to me.[1] I share what follows in recognition of our kūpuna and their brilliance as they are reflected in the work of these scholars with the hope that they will resonate with all who conduct research within Hawaiian communities. Kumu Davianna and Kumu Jon, mahalo for all you have done to establish a place for us up-and-coming ʻŌiwi scholars. We are grateful to you for transforming academia and inspiring us all. Mahalo for helping me find my voice again.

A Journey Through Research and Academia

The leaders of contemporary Hawaiian scholarship whom we know from books and protests are the same Kānaka Maoli we call Kumu, Aunty, and Uncle. Influential scholars such as Drs. Osorio, McGregor, Lilikalā Kameʻeleihiwa, and Noʻeau Warner are among those whom I have learned from and look up to. Their work, among that of many other influential ʻŌiwi scholars, has changed the way we view research and has broadened what constitutes academic scholarship. Because of the resistance and persistence of these scholars, I and other ʻŌiwi have a place in academic scholarship at this university, the University of Hawaiʻi at Mānoa (UHM), that honors our ancestors. Because of their tenacity I will never waver on who I am as Kanaka Maoli. I am not alone; emerging ʻŌiwi scholars across a range of academic disciplines and institutions of higher

education are thriving, driven by our kuleana to our ʻohana, our people, and our ʻāina.

He aliʻi ka ʻāina, he kauwā ke kanaka
The land is chief, man is its servant

Ua lehulehu a manomano ka ʻikena a ka Hawaiʻi
Great and numerous is the knowledge of the Hawaiians

When I arrived at UHM, this ʻōlelo noʻeau is what I believed to be true. Many of us ʻŌiwi come to the university rooted in our ancestral perspectives. The validity of ʻike kupuna in academia is no longer up for debate, as evident in the scholarship established in previous generations. What I am trying to learn now is how the western-academic-scientific methodologies and technologies taught across university disciplines can help us do what we know to be true and not question the value of ʻike kupuna that we are grounded in today.

This is where my struggle begins . . . and I have many questions. As the next generation of scholars, how do we fulfill the expectations of the leaders who have come before us? How do we take the learned methods and technologies that work for us and use them effectively as tools to solve our current problems? To move us toward answers to these questions, I share in this chapter how I arrived at a framework grounded in ʻike kupuna that guides the way I engage in research.

ʻIke Kupuna as Academic Scholarship

Ma ka hana ka ʻike
Knowledge is gained through doing

Nē huli ka lima i luna, pōloli ka ʻōpū; Nē huli ka lima i lalo piha ka ʻōpū
When hands are turned up, the stomach is empty; When hands are turned down, the stomach is full

ʻO ke kahua ma mua, ma hope ke kūkulu
First the foundation, then the building

It is the ʻāina that teaches us, and the oral traditions that document our relationship with the ʻāina. The lessons our kūpuna learned and the interdependence they shared are alive in our ʻāina today.[2] I am certain that the intricacies within ʻōlelo, moʻokūʻauhau, moʻolelo, mele, loʻi, loko iʻa, and heiau ground us in who we are as servants to this land and will manifest as the answers we need

to thrive if indeed we look to these sources. In the context of research, this knowledge, experience, and aloha from ʻāina will also provide the next generation of scholars with systematic frameworks to further liberate academic scholarship. My challenge has been to find the balance between growing in ʻike kupuna—standing firm on this foundation—and pulling in the tools necessary, wherever they may come from, to act in ways that move our people forward. I approached this challenge in the only way I felt pono to do so.

Methodology

Nānā i ke kumu
Look to the source

On March 6, 2014, I sought the guidance of Dr. Jonathan Osorio, professor at the Kamakakūokalani Center for Hawaiian Studies, and on April 16, 2014, I met with Dr. McGregor, professor of ethnic studies, with the intent of gaining insight into how they navigate research. I hoped to learn what continues to inspire their scholarship and the lessons they have learned in the process. Most of all, I hoped their manaʻo could guide students like myself as we further construct our ideologies and approaches to inquiry. Excerpts from these interviews follow.

> Research is something young people should not be afraid of; it is not some kind of formal thing. You do not have to be taught to do it; you can learn by yourself. It helps if you have mentors and it helps if you have kumu who will give you some hints and show you a few things, but research is also personal. (Jonathan Osorio)

Indeed, the perspective on research methodology that I have been moving toward is personal, rooted in a place very special to me and familiar to many students at UHM: Ka Papa Loʻi ʻO Kānewai, an ancient loʻi within the ahupuaʻa of Waikīkī, moku of Kona, mokupuni of Oʻahu. The loʻi was restored in the 1980s by a group of Hui Aloha ʻĀina Tuahine Hawaiian language club students—later known as Hoʻokahe Wai Hoʻoulu ʻĀina—guided by kūpuna such as Harry Kunihi Mitchell of Keʻanae-Wailuanui, Maui. Ka Papa Loʻi ʻO Kānewai is a sanctuary, a community-driven grassroots organization, and a department within the Hawaiʻinuiākea School of Hawaiian Knowledge at UHM that cares for endemic species of taro and offers college-level courses on traditional taro farming practices.

Ka Papa Loʻi ʻO Kānewai has been my foundation for the last four years at UHM. The ʻāina there continues to teach me moʻokūʻauhau—that I descend from Hāloanakalaukapalili, that I am kaikaina to these islands and to the ele-

ments, and that I therefore have a kuleana to learn and serve. Ideas surface when I walk mauka to check the poʻowai to ensure that the waters of Mānoa continue to flow through the land. The knowledge I gain comes from turning my hands down to work in the loʻi, learning from my kumu, and observing the keiki that come to mālama Kānewai each day. As I learn the levels of the ʻauwai and how much water must flow in and out of the loʻi, I grow closer to understanding the complexities and beauty my kūpuna must have experienced. I am learning how this reciprocal relationship continues to construct new meaning in my life and helps me understand my role in academia.

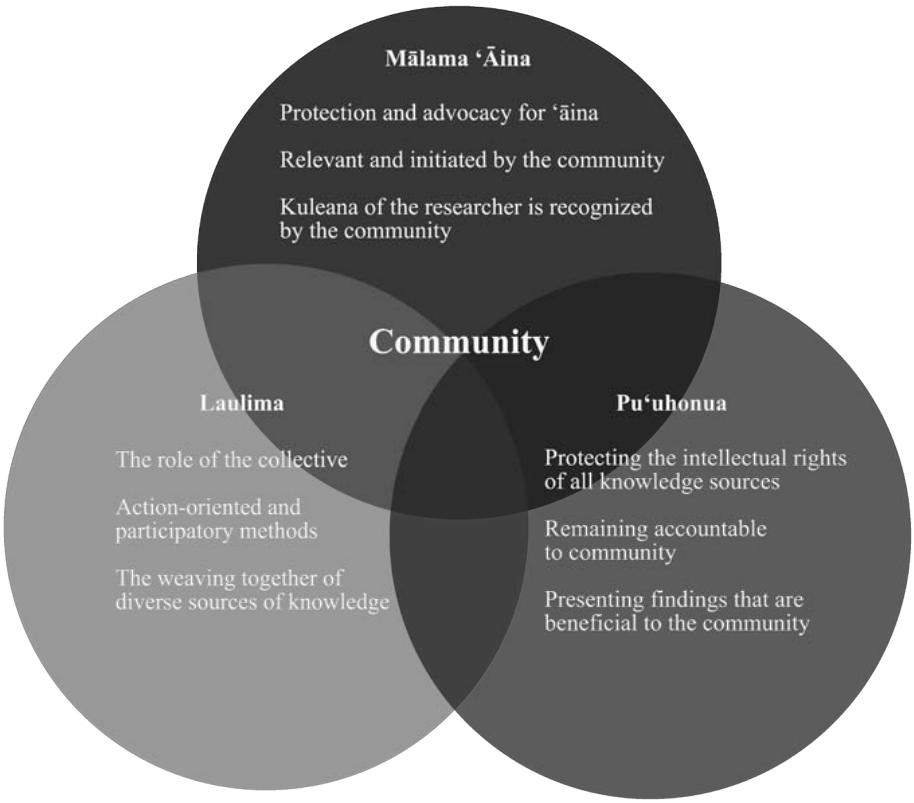
Hoʻokahe wai hoʻoulu ʻāina
Make the water flow, make the land flourish

Uncle Harry Kunihi Mitchell uttered the phrase "Hoʻokahe wai hoʻoulu ʻāina" in the 1980s as the water began to flow once again throughout Kānewai. Until this day, three guiding principles are practiced at Ka Papa Loʻi ʻO Kānewai and provide a means to organize the ideas presented in this chapter:

1. Mālama ʻāina: to care for, protect, and maintain all that feeds—land, water, ocean, and all contained therein
2. Laulima: many hands working together toward a specific goal
3. Puʻuhonua: a safe place, a sanctuary for plants, animals, ecosystems, and all people in which to be, learn, work, and relax

As I worked one morning with fourth graders from a local school to clear the ʻauwai, the voices of Drs. McGregor and Osorio flowed through my mind. I realized how mālama ʻāina, laulima, and puʻuhonua not only guide our work at Kānewai but also coalesce and become a lens through which to understand the manaʻo they shared with me. These three principles are intrinsically related to one another, and it is the value the community places on them that links the principles together. There is value in research done within Hawaiian communities that focuses on relationships and reaching collective understandings of the shared intent that affirms ʻike kupuna. That is the theory, the practice is aloha, and the approach is spiritual in every way—acting out of humility, talking story openly and honestly, and being led from the naʻau. It is the integrity of the relationships I nurture that takes priority.

ʻĀina, ʻohana, kūpuna, teachers, community, academia, me—we are all related. Seeking to understand the interdependence of these relationships through the principled practice of aloha ʻāina is ʻāina aloha[3] and how the framework presented below was actualized. Therefore, the narrative presented here is a cyclical conversation comprised of Drs. Osorio and McGregor's interview



ʻĀina aloha research framework based on the principles established by Hoʻokahe Wai Hoʻoulu ʻĀina at Ka Papa Loʻi ʻO Kānewai, Waikīkī, Kona, Oʻahu.

excerpts and my perspectives on inquiry that aims to highlight how ʻŌiwi pursue research and carry kuleana.

The Relationship of Mālama ʻĀina and Research

I understand mālama ʻāina as the act of caring for and protecting all that feeds. In a research context I believe that inquiry done within Hawaiian communities and with a Hawaiian focus must produce outcomes that mālama ʻāina—that seek to protect and advocate for ʻŌiwi, our practices, and our resources.

> I am more interested in looking at where Hawaiʻi is going in the world and how we are being caught up in this global economy. What sort of sense we should have of this especially if we do become sovereign again, especially if our independence is earned again. Those are the kind of things that I am far more concerned about. I think while other people are doing research on what our nineteenth-century ancestors went through, I am interested in what the twenty-first-century Hawaiians are going through. That is what I write about,

> that is what I look into, that is what I consider the most important things I can teach—how to pay attention to this, how to recognize what is going on, and how to advocate for older and traditional communities and values. (Jonathan Osorio)

> The task of research has become somewhat easier because resources have been taken out of the deep archives and the basements of library microfilm and they are now more accessible to the community. Use it to inform and begin your process of research, but you still need to go into the community and speak with the community and work side by side with them. Feel the pain, understand both the best and the worst part of living in a place. How can our mo'olelo and the knowledge of our ancestors and the places where we live help us become more functional as families, better caretakers of the places where we live, more caring of our community, and compassionate leaders in our communities. It is not just getting the 'ike; it is also getting the 'i'o. And through this process becoming a compassionate person, really caring for our communities, and supporting them through their trials and tribulations. (Davianna McGregor)

Drs. Osorio and McGregor speak about action: advocacy for 'āina, for our people in the present, and for our communities, the values held within, and how these enduring understandings contribute to our identity and path ahead. This continuum of 'ike kupuna and advocacy for the collective must drive inquiry because the contrary seeks to claim and appropriate ancestral knowledge, language, and practices and in the process produces hegemonic narratives that destroy the essence of our culture. This statement relates to a recent experience I had in a doctoral-level course. The class had read and discussed the professor's publication, which attributed the lower likelihood of Native Hawaiians to emerge as leaders in education to the Hawaiian value of "ha'aha'a"—which the professor translated as "humility." The professor's interpretation and application of the value contradict what I know to be true about ha'aha'a as exhibited by 'Ōiwi leaders. What can we learn from prevailing hegemonic narratives that continue to be taught across academic disciplines? Let us continue to identify, discuss, and critique them from multiple perspectives and discredit them completely.[4]

> Research on "Hawaiiana" and writing on "Hawaiiana" in the twentieth century was basically not done for us. It was not done to save our culture. It was done to identify the culture that these people believed was disappearing. It was done to titillate, to educate, in order

> to stimulate people from America and from Europe and from other places about this place [Hawai'i]. It really had nothing to do with us except for we were the objects of the study. We were the "thing" being studied. What we are doing now is we are pulling all that stuff away and saying you have no authority to do this. The stuff that you are writing is not accurate, it is not truthful, it does not serve the kinds of purposes that education should serve, which are to empower and strengthen the people. It does not stop them from doing it, but we have this kind of advocacy, saying *what you are doing is not real. It fulfills some other kind of end, some other kind of objective.* But it does not fulfill any kind of end that matters to us. (Jonathan Osorio)

Before I begin any research project, I ask myself these two questions: What is my intent in conducting this project, and what are the goals of the community I am engaging in? If the answers to these two questions do not align, then these purposes and goals need to be addressed before I move forward. Dr. Osorio talks about the purpose of education being to empower and strengthen people. Research done with shared intention and respect within the community has the power to achieve that purpose.

Whether a project involves a formal research component or not, it should be initiated by the community because members of a community know what is important to them and what are the problems facing them, and they can visualize possible solutions. When communities address real problems, research has relevance to the struggles that Kānaka face.

> There were many issues involving our members of the 'Ohana [Protect Kaho'olawe 'Ohana] on their home islands. It was apparent to me that the main threat in all of these rural communities was some form of development—the spaceport in Ka'ū, geothermal energy in Puna, tourism development in Hāna, the withdrawing of water from that whole Ko'olau coast of Maui to develop Kīhei, and plans for commercial tourism on Moloka'i. So everybody was facing their own kind of struggle and the 'Ohana was striving to support each of those efforts on each of those islands. (Davianna McGregor)

> Kānaka know how to do research that is relevant for themselves. When I am advising graduate students that are writing theses or doing projects in their MAs, I tell them we are not here to teach you a particular kind of research. I am trying to teach people to understand and to recognize what it is that is most important to them as a student, as a Kanaka Maoli, as a member of a family. What is it that is most

important to you, and how do you make the work that you are doing relevant to the things that are important to you? (Jonathan Osorio)

When I moved home in 2010 to pursue a master's degree in education, the research that seemed most relevant to me then was to find a solution to the health disparities affecting my ʻohana. Before moving home I was teaching kindergarten in Australia, and I wondered why their curriculum was full of lessons about their natural environment and hands-on learning about organic farming and healthy eating. I wondered why I did not learn these things about my home when I was growing up on Oʻahu. I was saddened by the history of diet-related diseases prevalent in my ʻohana. I moved home with a desire to grow food for my family and understand the relationship among well-being, education, and ʻāina. It took me twenty-four years to understand what was important to me as a Kanaka, a daughter, and a teacher, but when I found it, I knew what my kuleana would lead me to do.

For the researcher, the relationship between doing relevant research and having the kuleana to do it must be clear. I understand kuleana to be one's responsibility and one's privilege just as my kuleana in my ʻohana is to mālama my

Summer and her nephews, Koa and Jacob Maunakea, in their māla'ai at Waipahu, Oʻahu. Photo by Jennifer Maunakea.

nephews and grow food for my family. I have a place in my ʻohana that is recognized by everyone, and I am beginning to understand my academic kuleana in research in the same way.

> The principal thing for me is that I have been fortunate to be invited into a community. The community really determines whom they want to work with. They will reject you or they will accept you. After the subsistence study in Molokaʻi, I was involved again with Jon Matsuoka of the UHM School of Social Work and Luciano Minerbi of the UHM Department of Urban and Regional Planning on the social impact study for the proposed spaceport in Kaʻū. We worked with the members of the community who were most concerned about how the proposed industrialization would affect Kaʻū. They approached us to please get involved and to do the social impact study. So we worked with them to identify who were the people who should get invited to focus groups and who are the people we need to do more in-depth interviews with. (Davianna McGregor)

> There is a very, very different way of looking at knowledge if you are a Kanaka in terms of kapu, in terms of sacredness, in terms of where it comes, and in terms of your kuleana to it. If you do not have a kuleana to something, you should not be going there. If you have the kuleana it means being from a community in which you have a stake that everyone else recognizes; it is not something you can claim. One does not just get a kuleana; one is always given a kuleana. One is always handed it after some kind of training. So this is not about race, not about ethnicity; it does not have to be about koko. It has to be about, Does the community recognize you? If they do then you have a kuleana. (Jonathan Osorio)

The issue of kuleana is critical, particularly understanding that it is given, kuleana must continue to be earned, it is not claimed, and that it comes to be recognized by everyone involved. For me, fulfilling kuleana takes constant reflection on the words I speak in my researcher or evaluator role, as well as feedback from the community as to how I am completing the tasks asked of me.

The Relationship of Laulima and Research

I understand laulima to be the act of upholding my kuleana in a group and fulfilling that kuleana to the best of my ability to help the group succeed at the task at hand. I learned this principle at the age of eight when I started paddling

canoe. My coach taught me that every seat has a responsibility. When I sit in seat one, I must set the pace and keep a steady rhythm for everyone to follow. If I sit in seat six, I am the steerswoman, and I must establish a good line, be aware of the elements, and encourage my team. If everyone fulfills his or her kuleana the wa'a will move smoothly. In the context of inquiry, the methods one chooses must value and work in harmony with all voices of the community of participants. Both scholars talked in terms of honoring every voice present in the research process and bringing together knowledge from diverse sources.

> Is there an indigenous methodology of research? No, I think there is an indigenous viewpoint, I think that Kānaka Maoli, like other native people, have a particular way of seeing the world. We have our own values, we have our own standpoint; we have our own perspectives on things and our own methodologies. The things we devise as ways of approaching research are varied and diverse. The thing that links us together is the sort of sense that *my Aunty's voice has value in this story, the land is speaking in this story, the rain is speaking in this story*. There are more things that are a part of this narrative that you are not going to find in a typical European, American kind of presentation. (Jonathan Osorio)

How do I explain the spiritual forces in my life and in nature and how they drive me to act? In terms of research methodology, how do I then articulate the unseen—but understood and revered—underpinnings of what we experience, such as the land speaking or the rains speaking? How do these forces affect the transcribing and sharing the stories of others? The community of participants must have full control over this process.

> I started to recognize that when you are researching peoples' lives you really have an obligation to include these subjects in the whole conversation about the research. You have no right to treat their stories as yours. (Jonathan Osorio)

As researchers, it is our kuleana to share the stories of participants in the way *they* want their stories to be shared. To do that and to truly advocate for others we must be able to open our minds, humble ourselves, and see things from other perspectives.

I see laulima as a way to approach inquiry as a team, with the community of participants setting in motion and guiding the entire process. Dr. McGregor, in partnership with scholars across academic disciplines, has constructed

multimethod approaches involving community members in the protection of their practices and resources.

> The community approach that we use is actually called "participatory action research."[5] That is what the academy calls it, but it is very much community-based research—the idea being that it is participatory with the community, and it is action-oriented and geared toward a purpose. For the subsistence study on Moloka'i we met with the community, and we decided to develop a multimethods approach that included an island-wide telephone survey, resource mapping, focus groups, and key informant interviews. We were very fortunate to have students from the community help conduct the survey, and we worked with the community to help develop a set of questions. We relied on people from the community to reach out and invite key hunters and key fishermen and women, limu gatherers, and farmers in each district to focus groups. We asked what were they concerned about. Because it was a policy-making process, we asked them what policies were needed to protect these resources.
>
> The importance is that the community invites you in or welcomes you. Then you work with the community and the families in the community to ask who are the long-time families living here that rely on these resources; and who would be willing to talk with us and which of those people would be good to do more in-depth interviews. (Davianna McGregor)

Laulima may also be approached as a way to gather knowledge from diverse resources and then cohesively weave them together to gain deeper understandings of people and place. When this is done, new knowledge is constructed and may be used as a tool for education and policy making for the broader community.

> Everyone who does an MA thesis in Hawaiian Studies or Hawaiian Language is basically doing this kind of research heavily informed by Hawaiian language newspapers. A good many people have looked back at the lives of individuals who were dealing with a new sort of American ideas but still were very much Kanaka Maoli. We have had people talking about Nāwahī, 'Ōpūkaha'ia, and chiefs like Lunalilo. We have students doing projects that really focus on particular land places—two ahupua'a in Hāmākua—creating a whole website for people who live and come from that community, to en-

able them to preserve that community from being overrun by new developments. We have somebody now working on a similar kind of project in Waiākea, Keaukaha, and Hilo. These kind of ʻāina-based projects are slowly proliferating. When they do that, these projects tend to be this multimedia thing that goes onto a web—pictures, sound, and movie kinds of bites. They take newspaper articles that mention these places and bring them out and show them, transcribe them, and translate them—basically trying to get a sense of what that ahupuaʻa, what that wahi pana looked like 100 years ago, 200 years ago, and how it was shaped by each new human community. (Jonathan Osorio)

You document the spiritual connection with the ʻāina through the moʻolelo and who were the deities who lived here and shaped the landscape. Oli and songs all document what our ancestors observed since it was an oral culture. What did our ancestors observe about these areas in their lifetime and passed down to us through the mele, the oli, the ʻōlelo noʻeau, the names for all these places, the winds, and the rains? Then we proceed with the story of the people. Who and at what point were the chiefs associated with the place? Who were some of the families whose names were associated with the place? What can you find out about the chiefs of different eras? Now you have Kēhau Abad's work, which looks at a genealogy of the chiefs on each island put together from all the various genealogy sources, especially Fornander and Malo. So, looking at all those genealogies that were put together by the original Hawaiian scholars Malo, and Kamakau, ʻIʻī, and Kepelino, is there anything in their writings about this place? As you move forward in time you look at the Māhele records and see what were the lands that were claimed and what were the testimonies that the kuaʻāina provided to get their claims. So that would reveal what resources were there. And then there is mapping. Looking at historical maps will identify place names and resources. So what do the maps tell us about the changes to the landscape in these areas? Look and see what is in the newspapers and what is in the Hawaiian ethnographic collection at the Bishop Museum about these places. (Davianna McGregor)

In her 2006 book, Dr. McGregor detailed her approach to reconstructing a history of a place using both historical documentation and a contemporary multi-methods approach done within the communities of Molokaʻi, Maui, Puna,

Kā'u, and Kaho'olawe.[6] Through our conversations as well, I am beginning to see the relationship of laulima and research through the working together of people and diverse sources of knowledge.

The Relationship of Pu'uhonua and Research

The final component within the framework is pu'uhonua, which I have come to understand as a place of safety, whether it is a physical space or a metaphorical environment of safety that imbues a setting. As an educator, it is especially important to establish a safe classroom where all my students and their 'ohana feel comfortable coming to me as the teacher and trust that I have their children's best interests at heart. I view pu'uhonua as conducting research in a way that is safe and protects all involved. For the researcher it is being mindful and respectful of individuals' intellectual rights and honoring their wishes as to whether to keep their stories secret or to share them.

> There is a right way to get at any question that you deserve to ask. Part of the issue for Kānaka is that there are some questions that are not for us to ask. That is another thing, something that westerners do not believe. In fact, they find this kind of statement really frightening. There are things that people do not want to respond to, things that are secret, things that people feel are a family possession. And that sharing it even within the family, if it means that if that story gets out to everyone in the public, they are not going to share it. As Kānaka we need to be very mindful and completely respectful of that. (Jonathan Osorio)

> You really have to respect each community and their intellectual rights to their old ways and respect what they want to have shared. So I have seen people from outside be welcomed and do very good jobs. I think though, that it is important to train a new generation of Hawaiian researchers as a process of learning and giving back to the community. Then people may have more confidence in them and want to share more.
>
> The goal was to protect resources, not to expose them so that they become vulnerable, but to document them so that they would be protected. Our big concern in conducting surveys is only asking the number and kind of questions you need for the purpose for which you are doing the research. Keep focused. Otherwise, it is really just maha'oi and getting information you are not going to use and you do not really need. Simply focus your survey questions to the point. (Davianna McGregor)

I am learning that being accountable to a community starts with understanding myself first as servant and second as a researcher. Gaining this understanding requires me to constantly reflect and look within myself to ensure that my actions have integrity and are transparent to everyone involved.

> If you are an unknown Kanaka Maoli and you are trying to get people to give you kuleana, then you have to work with them and sometimes over a long period of time—you can't get impatient. You can't start thinking they should just accept me. Here is another thing: You can never think to yourself, I have earned their trust or I have arrived. You have to continue to live up to their trust. (Jonathan Osorio)

> I was in partnership with two non–Kanaka Maoli researchers who were committed to working with the Native Hawaiian community and empowering the community in this process. We were very conscious of being respectful of the Hawaiian values. How much can we inquire without being perceived as maha'oi, where is that boundary, always being very respectful, and assuring that if they do not want it shared then we would not share it. We allowed the community to read the draft report so if they felt it did not reflect their mana'o they had a chance to change it. I was always concerned to make sure that it represented their mana'o in the best way. Maybe not exactly word for word, but it flowed and it represented their thoughts. (Davianna McGregor)

Living up to the trust of each community one works with, and representing the mana'o of kūpuna especially, is a heavy kuleana I am still learning to carry. The researcher must remain accountable to the community throughout the inquiry process when presenting research findings and later as well. The process in which findings are shared as well as the findings themselves must be relevant, useful, and safe for the community of participants involved.

> Many times when we went to talk to people in the community they would say, "I've been concerned that researchers come get all this information and I do not know where it goes, I never see it, and then it just ends up on some shelf." So we were very committed to making sure that they saw what our findings and our conclusions were and that they had input in the recommendations that arose from the findings. We reserved money to duplicate the reports so we could give them copies. One of the main recommendations that came out of the

> Moloka'i subsistence study was to establish a community-based subsistence fishing management area for the Mo'omomi Bay and adjacent Kawa'aloa Bay. For the report, we drafted a bill that was later revised and submitted as a bill in the legislature. The report did not just end up on a shelf.
>
> When I did my book I integrated the research I did for my dissertation, which was ethnographic research and historical documentation, on those rural places. I drew upon the audio recording collection at the Bishop Museum. I was very fortunate because up until that time no one else had been allowed to access the audiotapes. It was important that those tapes could get out to the communities. So I worked with the librarian on Moloka'i to request that the tapes be placed in the library on Moloka'i so that students on Moloka'i would have access to them. That way they do not have to come all the way to the Bishop Museum to hear the tapes of the kūpuna from their community. (Davianna McGregor)

As I listened to my conversations with Drs. Osorio and McGregor and reviewed the transcripts, I started to see how the three principles—mālama 'āina, laulima, and pu'uhonua—collectively were present in every excerpt. This is the lens I am looking through now: a growing foundation of 'ike kupuna. We must take the enduring understandings of our ancestors into the next phase of 'Ōiwi scholarship.

Conclusion

The key concept that emerged from the time spent talking story with Drs. Osorio and McGregor was the relationship between research and mālama 'āina, laulima, and pu'uhonua. The wealth of this project came from ku'u 'āina aloha o Kānewai. When I did not know how to make sense of the brilliance shared with me by these scholars, when I stared at their transcripts for months and made no progress, it was cleaning the 'auwai with fourth-graders that inspired me and led me to this approach to research that I hope will resonate with each reader and learner.

It is clear to me that the purpose of inquiry within Hawaiian communities and Hawaiian-focused research should be rooted in one's kuleana to mālama 'āina—for the protection and advocacy of our places, for the resources needed to survive, and for the Hawaiian communities, their values, and knowledge sources to be involved in the research. Research outcomes must be beneficial for the community involved, and the scholarship produced must affirm and actively move 'Ōiwi knowledge systems forward. In terms of methodology, the

community must guide and inform every aspect of the process, and researchers must humble themselves to truly understand the realities of those they are researching while being honest and open about the research intent. This creates a safe space for all involved in the process. As a researcher, one must first listen and then do everything possible to protect the community and its intellectual rights while advancing collective goals. The researcher must honor all the voices and stories shared and use them to benefit those who gave of their knowledge. Finally, those with kuleana should engage in research because we are the ones who know what we need for our language, culture, and people to survive. Young learners and scholars must not be fearful, because in the process of research and academia we are supported by our kūpuna and kumu who have come before us with guiding insights to help us move forward.

Uncle Calvin Hoe, kumu of Hakipuʻu Learning Center in Koʻolaupoko, Oʻahu, once told me, "*Nānā i ke kumu*," which means to seek knowledge not only from teachers but also from within. I do not believe that research frameworks should be constructed merely by choosing Hawaiian words or phrases or recognizable symbols within our culture, figuring out a way for them to work, and running with them. I think the deep understandings that make our culture so beautiful and true are directed by one's naʻau and are found within our ʻāina where our kūpuna dwell. The answers to our questions about research, education, sovereignty, health, economics, and well-being can be found in an interdependent relationship with community, ʻāina, and ʻike kupuna.

At the beginning of this chapter I raised two questions. As the next generation of scholars, how do we fulfill the expectations of the leaders who have come before us? How do we take the methods and technologies that work for us and use them effectively as tools to solve our current problems? The next generation of learners who arrive here at UHM will be grounded in ʻāina and its teachings, will be educated, and will be hungry for more. We see this already in our keiki and ʻōpio. Will we be ready to feed them what they need? Will we be able to model some sort of union between ʻike kupuna and western-academic-scientific methodology without conflict? I would like to have more conversations about the kuleana of our generation in academia. Let us do it together and have impacts that will elevate our lāhui.

The time spent in conversation with Drs. Osorio and McGregor left me inspired and recharged in my academic journey at a time when I really doubted myself. I will conclude with their words of advice and encouragement for all of us as we move forward:

> If you find something that you are really passionate about, that is something you can't go to sleep at night until you figured out this one little thing, or you can't fold up your computer and leave your

office until you have figured out this one little thing, then you need to trust that passion and that's the thing that is going to drive you through. There will be no shortage of people who come and say to you, "That is so dead end kind of research." And the thing about it is, I just don't believe that to be true. I think you have to trust that your spirit knows what it was placed on the earth to do. When you find it you know it. You feel this is it because you really can't stop thinking about it; you really can't stop talking about it. When you find that kind of thing, you can't let anybody talk you out of following that path until it ends. And it doesn't mean it's going to end in a well-paying job. But if you're on the path you're supposed to be, other paths will open. This is something I have seen in my own life; I know that it's a true and a real thing. I don't think that it's something that any, that very many Haole teachers are going to tell you. Because I don't think they buy this sort of mysticism. But I think Kānaka in general understand this. They understand that's your 'aumakua, that's your kūpuna speaking to you, that's Akua speaking to you. You are being guided. So the hard part sometimes is trying to figure out what that thing is. Some people don't have any trouble, and some people it takes a long time. This is not necessarily something that comes to people right away. So yes, if it's your spirit, if it's for you, your spirit knows it and you should trust it. (Jonathan Osorio)

George Helm always said follow your na'au, but do your homework. You really have to do your homework and research. Start looking; become knowledgeable on your own before you reach out to ask for more information. Like I said, it is important to ask but first you need to do that groundwork—be it on the computer, or be it in the library, the archives, or the museum. Do the legwork; you need to read at least fifty sources before you can get a picture of the places and the life of the people there. Just going through all our original sources from our Hawaiian historians from the 1800s and those who came later in the newspapers. So do your groundwork, and then you have earned the right to go and ask the kūpuna for information. Then maybe they will share if they think you have done your homework. You have to also convince them to have confidence in you, that you will take care of the mana'o because it is precious and you do not want it to be misused. Go out and do it; hear the voices of the land and the voices of our kūpuna; let that inspire you. (Davianna McGregor)

NOTES

1. If English explanations for Hawaiian words within the text are needed, see M. K. Pukui and S. H. Elbert (1986), *Hawaiian Dictionary* (Rev. and Enl.) (Honolulu: University of Hawaii Press), or search www.wehewehe.org. Several of the ʻōlelo noʻeau can be found in M. K. Pukui (1993), *ʻŌlelo Noʻeau: Hawaiian Proverbs & Poetical Sayings* (Honolulu: Bishop Museum Press).

2. For additional discussion on the interrelation of ʻāina and Kānaka and its implications for education and well-being, see G. Cajete (1994), *Look to the Mountain: An Ecology of Indigenous Education* (Durango, CO: Kivaki Press); N. Goodyear-Kaʻopua (2013), *The Seeds We Planted: Portraits of a Native Hawaiian Charter School* (Minneapolis: University of Minnesota Press); K. Hoʻomanawanui (2008), "'Ike ʻĀina: Native Hawaiian Culturally Based Indigenous Literacy," *Hūlili, 5,* 203–244; P. Kanahele (2005), "I Am This Land, and This Land Is Me," *Hūlili, 2,* 21–30; C. K. Naone (2008), *The Pilina of Kanaka and ʻĀina: Place, Language and Community as Sites of Reclamation for Indigenous Education: The Hawaiian Case* (Doctoral Dissertation), retrieved from http://scholarspace.manoa.hawaii.edu/handle/10125/20846; K. Oliveira (2014), *Ancestral Places: Understanding Kanaka Geographies* (Corvalis: Oregon State University Press); J. K. Osorio (Ed.) (2014), *I Ulu I Ka ʻĀina: Land* (Honolulu: Hawaiʻinuiākea School of Hawaiian Knowledge); and www.ecoliteracy.org.

3. Manulani Aluli Meyer says this about ʻāina aloha: "Aloha aina then becomes again the more ancient aina aloha in Hawaiʻi—an interdependence gained when we explore our essential relationships and respond accordingly, thus the energy and life-force found in *meaning as it relates to our universe. . . . It is the quality of our relationships that will help us evolve*." See M. Meyer (2013), Holographic Epistemology: Native Common Sense, *China Media Research, 9*(2), 94–101, quote on p. 99. A way ʻŌiwi relate to the universe is through the Kumulipo. Lilikalā Kameʻeleihiwa states, "Hawaiian identity is, in fact, derived from the Kumulipo, the great cosmogonic genealogy. Its essential lesson is that every aspect of the Hawaiian conception of the world is related by birth, and as such, all parts of the Hawaiian world are one indivisible lineage." See L. Kameʻeleihiwa (1992), *Native Land and Foreign Desires: Pehea La E Pono Ai? How Shall We Live in Harmony?* (Honolulu: Bishop Museum Press), p. 2.

4. For discussion on research and cultural hegemony, see L. T. Smith (2012), *Decolonizing Methodologies: Research and Indigenous Peoples,* 2nd Edition, Rev. Edition (London: Zed Books). For discussion on the pressing importance of research and education designed by the Hawaiian community, for the benefit of the Hawaiian community, see K. Kahakalau (2004), "Indigenous Heuristic Action Research: Bridging Western and Indigenous Research Methodologies," *Hūlili, 1,* 19–34; and K. Hoʻomanawanui (2008), "'Ike ʻĀina: Native Hawaiian Culturally Based Indigenous Literacy," *Hūlili, 5,* p. 237.

5. For community-based research and participatory action research (PAR) methods developed by Davianna McGregor, Jon Matsuoka, and Luciano Minerbi for the Molokaʻi subsistence study, see J. K. Matsuoka, D. P. McGregor, and L. Minerbi (1998), "Molokaʻi: A Study on Hawaiian Subsistence and Community Sustainability," in M. Hoff (Ed.), *Sustainable Community Development: Studies in Economic, Environmental, and Cultural Revitalization,* pp. 25–44 (Boca Raton, FL: CRC Press).

6. See D. P. McGregor (2006), *Nā Kuaʻāina: Living Hawaiian Culture* (Honolulu: University of Hawaiʻi Press).

PŪ‘OLO THREE

TOWARDS LIVING MĀLAMA ‘ĀINA: ACTING UPON KULEANA THROUGH ‘OHANA, EDUCATION, AND WELL-BEING[1]

Introduction

I include my community presentation (Maunakea, 2015) because it is a video representation that reflects the two overarching themes of my dissertation. Specifically,

- the value of ‘āina-based education across diverse learning environments including natural ecosystems, regenerative community food systems, ‘ohana and community life, and academic institutions, and
- the agency of collaborative community efforts and educational entities to reestablish the importance of reciprocal relationships between people and their places through the platform of ‘āina-based education.

The Setting of the Community Presentation: Huliko‘a Kaiāulu Scholar Speaker Series

This video documents my efforts to design, develop, and apply ‘āina-based learning in the context of intergenerational community education. In February 2015, I was invited by the Huliko‘a Kaiāulu Scholar Speaker Series planning committee[2] to talk about my journey through education and present an ‘āina-based learning workshop focused on Hawaiian health and well-being. The Huliko‘a Kaiāulu Scholar Speaker Series “was created as an opportunity for the

[1] Maunakea, S. P. (2015, February). *Towards living mālama ‘āina: Acting upon kuleana through ‘ohana, education, and well-being.* Community presentation for the Kamehameha Schools Huliko‘a Kaiāulu Scholar Series, Mā‘ili Learning Center, Hawai‘i. Retrieved from http://www.ksbe.edu/imua/videogallery/hulikoa-kaiaaulu-summer-maunakea-february-2015/

[2] The Huliko‘a Kaiāulu Scholar Speaker Series was developed in partnership between Kamehameha Schools’ Community Learning Center at Nānākuli (CLCN), MA‘O Organic Farms, Institute for Native Pacific Education and Culture (INPEACE) and University of Hawai‘i at Mānoa Hawai‘inuiākea School of Hawaiian Knowledge. Majority of the planning committee were Wai‘anae community members who also served as program staff from the organizations listed here.

community to celebrate the pursuit of higher education and listen to scholars from the Waiʻanae Coast share their manaʻo, while learning more about topics that impact their lives as residents of the region" (Kamehameha Schools, 2019, n.p.). Although I am from Waipahū in the ʻEwa moku, some of my ʻohana reside in the Waiʻanae moku. From my involvement in the Community Learning Exchange: ʻOhana Series[3] from 2012 to 2017, I established relationships with many of the kūpuna and other community members of Waiʻanae. When I was asked to present my research, I decided to use the opportunity to present about lāʻau lapaʻau—an ancestral Hawaiian healing process that uses prayer and medicinal plants to improve holistic well-being.

Figure 1. Community members collecting fresh ʻōlena root and dried ʻuhaloa leaves and blossoms to fill their tea bags

[3] The Community Learning Exchange: ʻOhana Series is a community partnership between Kamehameha Schools, MAʻO Organic Farms, and the Institute for Native and Pacific Education and Culture (INPEACE) on the Waiʻanae coast of Oʻahu. Through bi-monthly gatherings, program participants engage in intergenerational activities that seek to increase ʻohana and community engagement through hands-on cultural practice.

The Hulikoʻa Kaiāulu Scholar Speaker Series provided the opportunity for me to positively impact ʻohana and community well-being through ʻāina-based learning. Nearly 40 mākua, kūpuna, keiki, colleagues, and ʻohana attended the workshop. My presentation consisted of three parts:

- key lessons learned through my educational journey,
- an overview of my dissertation research and its proposed impacts, and
- a lāʻau lapaʻau workshop in which I focused on how to make a healing tea to soothe inflammation and respiratory illnesses.

The presentation allowed for me to discuss how the educational experiences I had throughout my upbringing contributed to the conceptualization and purpose of my dissertation research. The lāʻau lapaʻau activity created a space for intergenerational learning about the healing properties of plants, where the plants could be found in the Waiʻanae community, and the protocols involved in the healing process.

In Working One Learns: Ma ka Hana ka ʻIke

The overall concept I wanted to demonstrate to the community was the learning philosophy of ma ka hana ka ʻike—learning or gaining knowledge by doing (Pukui, 1993). I wanted to highlight the fact that although I was not raised in the cultural practices of mahi ʻai or lāʻau lapaʻau, I gained knowledge through the daily work and practice of tending to loʻi kalo at Ka Papa Loʻi ʻo Kānewai[4]. The more I dedicated my time to working at the loʻi, the more knowledge and skills I gained that I could apply at home. Ma ka hana ka ʻike is an ʻōlelo noʻeau and teaching philosophy often referred to today as experiential education (Tibbetts, Kahakalau,

[4] Ka Papa Loʻi ʻo Kānewai is a loʻi kalo and department within the University of Hawaiʻi at Mānoa Hawaiʻinuiākea School of Hawaiian Knowledge. Ka Papa Loʻi ʻo Kānewai offers college-level courses on kalo farming practices and hosts daily field trip visits from local schools. To learn more about Ka Papa Loʻi ʻo Kānewai, see: https://manoa.hawaii.edu/hshk/units/ka-papa-loi-o-kanewai/

& Johnson, 2007). Because of the effectiveness of ma ka hana ka ʻike as a learning strategy, it is often used to engage students in learning and to bring relevance to academic subjects (Tibbetts, Kahakalau, & Johnson, 2007). In the community setting, ma ka hana ka ʻike helps to draw forth prior knowledge and experiences. When these stories are spoken, knowledge is transferred intergenerationally as observed in prior Hulikoʻa Kaiāulu Scholar Speaker Series and Community Learning Exchange: ʻOhana Series gatherings (Maunakea, 2014).

The next section is a video timeline that references additional key concepts discussed in the video.

Video Timeline

00:00 minutes – 11:12 minutes

In this opening section, I acknowledge my ʻohana in attendance including my parents and aunties who reside in Waiʻanae. I talk about the ʻōlelo noʻeau, "I maikaʻi ke kalo i ka ʻohā" which means, "The goodness of the taro is judged by the young plants it produces" (Pukui, 1993, p. 133). This ʻōlelo noʻeau guides all of my actions and behaviors—I carry myself with integrity in a way that reflects honorably on my Maunakea, Aranda, Na–o, and Kalu ʻohana.

11:13 – 23:15 minutes

This section describes the major lessons I have learned through my educational journey starting with my ʻohana and then progressing through my schooling. ʻOhana extends beyond the immediate family to close friends and community. So I talk about how my ʻohana continues to teach me the value of unconditional love as well as my role in my community. I also include the lessons I have learned from non-academic learning experiences such as canoe paddling since I was eight years-old and my experience living and teaching Kindergarten in Australia. I explain that the lessons I have learned throughout my educational journey have helped change the way I

approach life. Since moving home in 2010 from Australia, I have challenged myself to live the values espoused by mahi ʻai and lāʻau lapaʻau.

23:15 – 34:23 minutes

This section discusses the place of Ka Papa Loʻi ʻo Kānewai, specifically, how knowledge is found in the continuity of practice to care for and maintain the naturally occurring cycles of the place. I explain that Kānewai has an ʻauwai system that nourishes the kalo grown to feed students and community members. The ʻauwai is a manmade ditch from the 14th century that uses gravity to continuously channel fresh water from Mānoa stream to the loʻi kalo, back to the stream, and eventually out to the ocean. It is a system of land management and a system of food cultivation that is ancient and modern in its practices. During this section, I make the connection that both knowledge and ancestral foods like kalo can be acquired through cultural practice. I explain that both cultural knowledge and kalo are accessible in Oʻahu communities, whether by the community of Waiʻanae or by the community at Ka Papa Loʻi ʻo Kānewai.

34:24 – 40:04 minutes

This section describes my dissertation research that was guided by the question, *How do all people of Hawaiʻi connect to and act upon their kuleana to ʻāina?* I discuss the 2011–2018 Hawaiʻi State Department of Education Strategic Plan that describes "connection to community, family, and ʻāina" (Hawaiʻi State Department of Education, 2012, p. 4) as a core value of education in Hawaiʻi. I also discuss how I believe my research will strengthen the connection between students and the ʻāina.

40:05 – 42:05 minutes

This section profiles the lāʻau lapaʻau practitioner Leinaʻala Bright who taught me how to prepare the ʻōlena and ʻuhaloa. Leinaʻala was a haumana of Levon Ohai, a kahuna lāʻau lapaʻau

from Kauaʻi who taught at the UHM Hawaiʻinuiākea School of Hawaiian Knowledge. I talk about how the lāʻau lapaʻau activity was taught to me by Leinaʻala Bright. The process of sewing a tea bag and filling it with the two medicinal plants was shown to Leinaʻala through prayer. It was an activity she did with sixth-grade students on Lanaʻi.

I demonstrate a simple, yet powerful process of making a healing tea from two lāʻau—ʻōlena and ʻuhaloa—both used to treat respiratory inflammation, among other ailments. These two medicinal plants also grow in the gardens right outside the Māʻili Learning Center where the presentation was held. I explain the healing properties of each plant and additional ailments the tea helps soothe. I encourage participants to look in their neighborhoods for these plants and to start cultivating them in their own gardens.

42:06 – 51:59 minutes

This section demonstrates the harvesting and cleaning process of medicinal plants, as well as outlining the dosing amount. The importance of prayer during the whole process of harvesting and preparing the lāʻau is emphasized during this section. The video shows the whole group forming a circle and then praying to begin the lāʻau lapaʻau process. After the prayer, each ʻohana works together to sew a tea bag and gather the ʻōlena and ʻuhaloa.

52:00 – 1:04:40 minutes

During this section I talk about the importance of giving the plants back to the place it was harvested from as well as the importance of thanking the ʻāina for its healing medicine. The rest of the video is footage of each ʻohana making and filling its tea bag with the ʻōlena and ʻuhaloa.

After the video

At the end of the night, not captured in the video, each ʻohana prayed once more over its tea bag to bring healing.

Research and Evaluation

At the end of the workshop, the participants were asked to complete an open-ended survey that asked, *What was your overall takeaway from the presentation?* A few participants said that they learned about the importance of ma ka hana ka ʻike. For example, one participant responded that she learned "that knowledge is gained by not only learning but by actual doing it and living it." Another participant responded, "Education through ʻāina," and another mentioned, "Learning comes from the naʻau." These responses show that those in attendance broadened their understanding of where knowledge is held and how learning can occur. In Hawaiian beliefs, knowledge is held in the ʻohana and passed intergenerationally through cultural practice.

Another prominent theme that emerged from the open-ended responses was the value of ʻohana. One participant responded, "We all lose focus of what make a person and she showed us her aloha and most of all the importance of family." Another response was, "The power of ʻohana gathering up staying close together and the spirituality that keeps." These responses describe how participants acknowledge the importance of ʻohana as well as an understanding of what keeps an ʻohana intact.

Discussion: ʻŌiwi Agency

My goal in presenting the lāʻau lapaʻau activity is to reclaim cultural practices in everyday life. This pūʻolo presents my agency to practice lāʻau lapaʻau in my family and the agency of the mākua and kūpuna in attendance to reclaim the stories of their ʻohana and share it with their keiki.

In my ʻohana, most of the knowledge of the healing properties of common medicinal plants growing in our backyard along with the role of prayer in the healing process was silenced for the last two generations. I could only recall one lāʻau that we used in the home which was lāʻī (lau kī). Whenever I was ill, my parents would wrap lāʻī across my forehead to draw out fever from my body. For the most part, my ʻohana had become reliant on store-bought or doctor-prescribed pharmaceuticals to remedy the on-set of common symptoms of illness such as sore throat, cold, or fever.

ʻĀina-based education in ʻohana and community settings focuses on reclaiming cultural practices that strengthen connections between people and the ʻāina as a source of nourishment. As Hunt and Holmes (2015) notes, "...(T)he daily actions undertaken by individual Indigenous people, families, and communities often go unacknowledged but are no less vital to the decolonial processes" (p. 154). This statement resonates with a growing movement in indigenous communities that focuses on everyday acts of cultural resurgence as critical components of decolonization (Corntassel & Scow, 2017; Goodyear-Kaʻōpua, 2013; Hunt & Holmes, 2015). For my ʻohana, my parents and I have become more in-tune with our bodies in order to recognize the first signs of illness. I pray immediately for healing and the knowledge of the plants needed to make the medicine. Then I go outside in our garden to harvest the lāʻau needed to heal any ailments before it worsens. Therefore, in my presentation, it was important for me to teach about medicinal plants that are found and easily grown in the Waiʻanae region that could be made into a tea to heal sicknesses so that other ʻohana, like mine, could strengthen their ancestral knowledge in healing and holistic well-being. I hope that this activity will encourage ʻohana to practice lāʻau lapaʻau and affirm any other cultural practices that they perpetuate in their homes.

Personal Reflection

I am grateful that this video continues to be of benefit to the people who watch it online. My aunties who have relocated to places like California and South Carolina say they are moved emotionally when they watch the video. We speak often about where they can find healing plants like ʻōlena and ʻuhaloa in their areas. They have also reclaimed lāʻau lapaʻau practices in their own lives, using remedies like lāʻī to draw out fever and gargling salt water to soothe a sore throat. One of my aunties is now growing medicinal plants that thrive in her climate. After the presentation, not only did I receive gratitude for sharing about the healing remedies of these plants from the community members in attendance, but they also taught me additional ways to prepare and apply the healing plants. My video presentation affirms that Kānaka ʻŌiwi are actively teaching one another the knowledge and cultural practices associated with lāʻau lapaʻau.

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PŪ‘OLO FOUR

STORIES OF ‘ĀINA-BASED LEARNING, HEALING, AND TRANSFORMATION: I OLA KĀKOU I KA HO‘OLŌKAHI[1]

Introduction

> Is it a delusion or symptom of madness to think that ‘āina can somehow be communicating with us at a wave frequency that cannot be measured by our machines? Would it be possible, if we opened ourselves in appropriate ways, to learn directly from ‘āina? I think yes. (Andrade, 2014, p. 12)

The perpetuation of knowledge systems such as learning directly from the ‘āina[2], often referred to as ‘āina-based pedagogies[3], is relevant in teaching communities how to live in cooperation with Hawai‘i’s ecosystems. “I ola kākou i ka ho‘olōkahi” is a Hawaiian saying that suggests the importance of mankind coming together in unity with the natural world. It also suggests the importance of mankind living in a state of unity because in reciprocal relationships life is found. In other words, it is in the action of unity that survival exists (personal communication with K. Laiana Wong, 2018). Cajete (2015) offers insight into the role of the natural world in the cultivating community. He states: “Building and rebuilding human communities in healthy and sustainable ways requires that we can learn from the natural world and mimic natural processes that create community, cooperation, and dynamic balance” (p. 92).

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[1] Maunakea, S. P. (in progress). Stories of ‘āina-based learning, healing, and transformation: I ola kākou i ka ho‘olōkahi. In G. Cajete (Ed.), *Native mind rising: Transformative visions for Indigenous education in a 21st century world*. Vernon, B.C. Canada: John Charlton Ltd. Publishing.

[2] Hawaiian language, words and phrases are used throughout the text. If English explanations for Hawaiian words are needed, see: Pukui M. K., & Elbert S. H. (1986). *Hawaiian dictionary: Hawaiian-English, English-Hawaiian (revised and enlarged ed.)*, Honolulu, HI: University of Hawaii Press. Alternatively, search www.wehewehe.org.

[3] ‘Āina-based pedagogies are dynamic and interdisciplinary processes of learning and teaching that hail from the natural landscapes and oceanscapes of Hawai‘i’s environment. These processes, which emphasize reciprocal relationships between Kānaka ‘Ōiwi and the ‘āina, draw upon place-specific intergenerational knowledge systems, language, and customary practices to frame curricula for all learners.

Therefore, learning from the patterns of the natural world and living in cooperation with the natural world, creates ecosystems where both humanity and nature can co-exist.

There are, however, elements that disrupt this co-existence. Over two centuries of western domination and 125 years of illegal political occupation by the US government have systematically disconnected Kānaka ʻŌiwi[4] from interdependent relationships with the ʻāina. Ongoing degradation of Hawaiʻi's natural environment continues to threaten the ability of natural ecosystems to replenish themselves as evidenced by the multitude of endemic plant and animal species that are either extinct or critically endangered. The disregard for the importance of natural ecosystems threatens the ʻāina-based practices, such as farming, fishing, and other methods of gathering food and medicines, Kānaka ʻŌiwi have relied upon for survival. According to Osorio (2014):

> The alienation of ʻāina from Kānaka so accelerated and intensified over the nineteenth and twentieth centuries that there has been few of us today who consciously recognize the enormous harm that has been done to us physically, emotionally, and spiritually by that separation. But the evidence of harm is everywhere: crippled and dysfunctional families, rampant drug and alcohol abuse, disproportionately high incidences of arrest and incarceration, and alarming health and mortality statistics, some of which may be traced to diet and lifestyle, which themselves are traceable to our separation from ʻāina. (p. ix)

Recently, there have been efforts to overcome the dysfunction stated above through language and cultural revitalization movements. Collaborative community efforts often referred

[4] Throughout the text, the following terms are used to describe descendants of the native people of ka pae ʻāina Hawaiʻi: Kānaka ʻŌiwi, Kānaka (plural), Kanaka (singular), and Hawaiian. ʻŌiwi and Hawaiian are also used as adjectives.

to as ʻāina-based programs have been actively connecting people to the ʻāina to heal the natural ecosystems of their places (e.g., removing invasive plant species, regenerating soil health, and opening up waterways). Many of these ʻāina-based initiatives focus on establishing regenerative community food systems, a process that includes restoring indigenous agricultural structures such as loʻi, loko iʻa, and ʻāina maloʻo as well as developing innovative food cultivation initiatives such as community gardens, school gardens, and food forests[5]. These initiatives strengthen the ability for Kānaka ʻŌiwi to provide for their own basic needs such as food, medicine, and services within their local communities while lessening reliance on the global market economy (Aikau & Camvel, 2016; Enos, 2015; Goodyear-Kaʻōpua, 2009, 2013; Maunakea-Forth & Abbott, 2015).

Purpose of Research

This research provides an overview of five ʻāina-based programs and the practitioners involved in cultivating food and community building. The purpose of this research is to examine the agency of young Kanaka ʻŌiwi practitioners to perpetuate the mahi ʻai and mahi iʻa practices of their ancestors while also sharing the intergenerational knowledge of their places with the next generation of caretakers. By sharing the voices of today's ʻāina-based practitioners and educators, others may understand how their actions contribute to healing and transformation in their own communities. Research suggests that increasing the capacity of community driven ʻāina-based initiatives may strengthen the ability of communities to feed, educate, and govern themselves while improving health, food access, education, and economic outcomes for Kānaka

[5] According to the Rodale Institute (2014), "Regenerative organic agriculture improves the resources it uses, rather than destroying or depleting them. It is a holistic systems approach to agriculture that encourages continual on-farm innovation for environmental, social, economic and spiritual well-being" (p. 7). For the purpose of this pūʻolo, the term regenerative community food systems is used to describe Hawaiʻi's food systems that align with regenerative organic agricultural practices. These include ʻŌiwi agricultural and aquacultural structures such as loʻi kalo, loko iʻa, and ʻāina maloʻo field systems that holistically nourish Hawaiʻi's communities in the present day.

ʻŌiwi (Fujita, Braun, & Hughes, 2004; Hawaiʻi Leadership Forum, 2019; Kanaʻiaupuni, Ledward, & Malone, 2017; A. K. Maunakea & Juarez, 2019; Meter & Goldenberg, 2017). Just as important is the need to cultivate leaders with the kuleana and skills who love and perpetuate this kind of work.

ʻĀina Aloha Research Framework

This research draws upon the ʻĀina Aloha Research Framework which positions relationships to place and community as influential constructs of research methodology (S. P. Maunakea, 2016). The key elements of this framework are derived from the guiding principles of Ka Papa Loʻi ʻo Kānewai[6]—mālama ʻāina, laulima, and puʻuhonua. These key principles are used as a lens to conceptualize, enact, and disseminate research within Hawaiian communities. In this framework, community is at the piko because research must be designed to be of benefit to the people and their places. According to this framework, action-oriented and participatory methods are used to weave together diverse sources of knowledge. In terms of dissemination, the research findings must be presented in a way that protects the intellectual rights of the knowledge sources involved. Finally, the kuleana of the researcher must be recognized by the community and the researcher must remain accountable to the community after the research is complete. See Figure 1 for a graphic representation of the framework.

Methods

This study involves interviews with four Kanaka ʻŌiwi practitioners who work at diverse regenerative community food systems on the island of Oʻahu. I highlight how their upbringings have led to the ʻāina-based work that they are involved in and how their work contributes to the

[6] Ka Papa Loʻi ʻo Kānewai is a loʻi kalo and department within the University of Hawaiʻi at Mānoa Hawaiʻinuiākea School of Hawaiian Knowledge that teaches college-level courses on kalo farming practices and hosts daily field trip visits from local schools. To learn more about Ka Papa Loʻi ʻo Kānewai, see: https://manoa.hawaii.edu/hshk/units/ka-papa-loi-o-kanewai/

well-being of their communities. These stories may help others understand the learning environments that help lead young people into ʻāina and community-focused work. It is important to note that these co-researchers are also my peers in that we stand united in the work that we do because we believe it is our role to honor and care for the ʻāina and in doing so, we continue to learn from the ʻāina and each other. A brief description of each co-researcher follows.

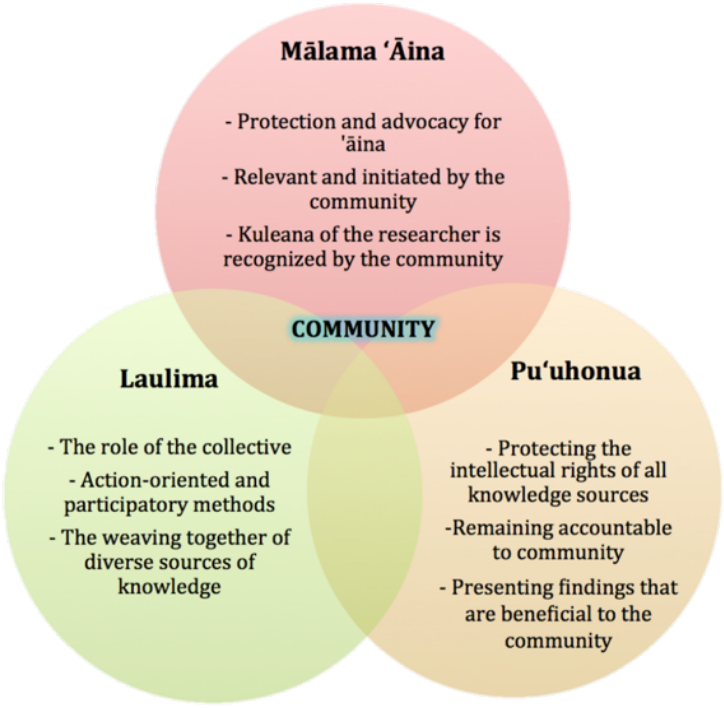

Figure 1. ʻĀina Aloha Research Framework

Co-researchers

Danielle Espiritu is the educational specialist at Hoʻokuaʻāina, a loʻi kalo in Kapalai, Maunawili, Kailua. Danielle coordinates the educational partnerships between Hoʻokuaʻāina and the schools and teachers in the community. She teaches students and families the process of growing kalo and helps with the daily operations of the loʻi kalo.

Ikaika Lum is the restoration director at Loko Ea, a loko iʻa in Haleʻiwa. Ikaika coordinates the restoration efforts at the fishpond. He teaches students and community members how to observe the natural patterns of Loko Ea as a way to understand what the fishpond needs to be healthy. Ikaika also helps to facilitate monthly community workdays.

Cheryse Kaui Sana is a farm manager at MAʻO Organic Farms, a USDA Organic Certified farm in Lualualei, Waiʻanae. Kaui oversees all areas of food production from planting to distribution. She helps to mentor youth from her community in the Youth Leadership Training (YLT) Program as they work part-time on the farm and attend college full-time.

Kuʻuleilani Samson is an educator at Hoa ʻĀina O Mākaha, a community farm in Mākaha, Waiʻanae. Kuʻuleilani uses the farm as her classroom to teach students topics such as planting seeds, cooking, and caring for farm animals. She also teaches lāʻau lapaʻau classes and works at her local farmers' market to teach her community about growing organic, healthy food.

Summer P. Maunakea is the Educational Specialist for the ʻĀINA In Schools Program, a farm to school initiative of the Kōkua Hawaiʻi Foundation. Summer teaches educators, parents and community members to facilitate garden-based learning and waste reduction lessons throughout Hawaiʻi's schools.

Moʻolelo

Moʻolelo (Lipe, 2016; Vaughan, 2018) is used to weave together a collective story specific to place and time. A series of open-ended questions on co-researchers' upbringing, ʻāina-based program background, and well-being guided the talk-story sessions. The talk-story sessions occurred between November 2017 and March 2018. I met with all of these co-researchers at their individual work sites and each talk-story session lasted between one and two hours.

To honor the authenticity of each co-researcher's journey, each moʻolelo is transcribed with edits approved by the co-researchers, with the exception of my moʻolelo which is a written reflection on my own upbringing and role within ʻāina-based programming. I feel that it is important to share my moʻolelo because, as I listened to each co-researcher, I saw how my experiences and beliefs resonated with their beliefs. I believe that by sharing my moʻolelo it encourages others engaged in similar work to reflect on the value of ʻāina-based learning in the strengthening of their own communities.

Firmly rooted in our ʻāina and identity as Kānaka ʻŌiwi, we collectively discuss the actions that we believe contribute to the well-being of our communities.

Danielle Espiritu and the Hoʻokuaʻāina Organization at Kapalai, Maunawili, Kailua

Figure 2. *Danielle Espiritu at Hoʻokuaʻāina. Photo provided by: Danielle Espiritu.*

Practitioner Profile

My name is Danielle Espiritu and I grew up in a lot of different places on Oʻahu, primarily Kāneʻohe and Heʻeia. I have come to the realization as an adult that a lot of my earlier

experiences were shaped by those places. My ʻohana has also influenced me in my growth. My mom's father is Hawaiian and her mother is from Samoa. My grandmother on my mother's side offered the most support in terms of me learning my identity as a Kanaka. The values of respect, honoring kūpuna, and honoring places and protocols shaped how I grew up.

Culturally, I didn't grow up very Hawaiian. It was only when I went away to college that I started learning more about the political history of Hawaiʻi. I learned about the injustice done to Hawaiʻi and I had to come to terms with my lamentation about the acts of colonization and also about seeing myself and my family as products of that. So I moved home in 2009 with a craving for some kind of cultural connection but not really knowing how to start developing it. It wasn't until 2012 that I met the ʻohana who I currently work with. I had all these desires to learn more about ʻāina, ʻai pono, and language because at the time I didn't speak Hawaiian. I felt ashamed about not knowing these cultural practices and a fear of judgment even from within the community. So I went to Hoʻokuaʻāina on a community workday and the ʻohana there invited me to come back whenever I wanted. I was a school teacher at the time so during the summer I would go there three or four times a week and just jump into the activities.

Hoʻokuaʻāina Non-Profit Organization Profile

In 2017, I officially came on board as staff with Hoʻokuaʻāina. Hoʻokuaʻāina is a non-profit organization founded by Dean and Michele Wilhelm in 2007. Hoʻokuaʻāina perpetuates the Hawaiian practice of kalo cultivation, and in doing so, we work to bring healing through connecting people to the ʻāina. We grow and supply kalo to the community but I see our main mission as using the loʻi and that space as a way to restore people's health and well-being. Our practice of growing kalo is influenced by the ʻāina and the practice of ma ka hana ka ʻike. The

main focus is on youth, but in the bigger vision our work is about restoring the health of families and communities.

How has the genealogy of your place influenced the values and practices of Hoʻokuaʻāina?

At Hoʻokuaʻāina, Uncle Earl Kawaʻa has been a huge influence on the leadership of our organization and on the context in which we work. Uncle Earl grew up in Hālawa Valley on the island of Molokaʻi. He grew up speaking Hawaiian and living off his ʻohana's land. He is the one who gave us the name Hoʻokuaʻāina. Unlike Uncle Earl, many of our generation here on Oʻahu live in places where we won't ever have opportunities to experience growing up with deep connections to a land base. So what we are trying to do is create transforming opportunities for folks to learn what it means to be kuaʻāina. We work day in and day out on the ʻāina because we believe that the growing of food is a worthwhile living. Our work is not "hashtag aloha ʻāina"—all show and no commitment to the land and to our people[7]. Our focus is not on making money; rather, it is about living a life dedicated to perpetuating the practices and skills we have learned as well as providing opportunities for others to learn.

Can you describe the ʻāina-based programming at Hoʻokuaʻāina?

In my role as education specialist, I develop partnerships with schools in the Koʻolau area. I work with teachers who are interested in Hawaiian culture-based education and ʻāina-based learning. I help find ways that Hoʻokuaʻāina can support what teachers are doing in the classroom and think creatively about ways that the ʻāina itself can be a teacher as well as a classroom. Some of the schools are coming to us with their classes three or four times a year. In

[7] The idea of "hashtag aloha ʻāina" refers to the occurance of people posting pictures of themselves on social media working on the ʻāina, most likely for the "appearance" of it rather than a display of deep committement to aloha ʻāina as a lifestyle.

addition to that, these schools are having specific community days just for their classes and their ʻohana. Some families take huli home to grow at their homes and they are coming back and telling us how their kalo is growing and how it is transforming their ʻohana. That's one thing that's been beautiful and rewarding for all students, but particularly for students who are coming from Hawaiian families. There is hesitation in the beginning and the parents mention things like, "I didn't grow up doing this," or "I don't speak Hawaiian." All of these hesitations emerge. But when they jump in the loʻi and start getting used to the place and start getting used to us, then a special kind of relationship develops and it is really beautiful.

What are the guiding beliefs of Hoʻokuaʻāina?

For all of the groups that come to the loʻi for the first time we talk about the phrase "nani ke kalo." At face value it means "beautiful the taro." However, we also inform the students about the genealogical connection Hawaiians have to kalo and the importance of it to our way of life. When we think about growing and preparing kalo to feed our communities, we should think about the words that we say, the thoughts that we carry, and the actions that we do. All of our mana goes into the food being cultivated. Eventually, it will feed somebody else and their family, their children, and their kūpuna.

How does Hoʻokuaʻāina produce food and feed the community?

How we feed our community relates not only to the *ways* that we grow and produce food but also to the *whys*. Part of it has to do with physical health—to provide people with healthy options and the transparency of what we are feeding ourselves, our children, and our elders. This belief influences the care that is taken in growing the kalo. We don't use pesticides, we deal with weeds by pulling them, all fertilizing is organic, and after each patch is harvested we let it rest for some time to regenerate. We have a genealogical connection to kalo and it is also the staple

of our kūpuna—especially in Kailua because, historically, people grew kalo on this ʻāina for generations.

Within the ahupuaʻa, water would typically flow from the top of the mountains and eventually make its way toward the ocean and into fishponds. Kaʻelepulu[8] and Kawainui were the two largest fishponds in Kailua, which primarily fed all the people in Kailua and Waimānalo. Seeing what that system was like in full operation must have been a sight to behold. Think about the wai flowing through the land and into loʻi kalo, then flowing to the fishpond to nourishing the fish; if the ecosystem was healthy and vibrant, just think about how healthy and vibrant the people would have been at that time.

How does your organization contribute to the well-being of your community?

Our main focus is "e ola pono." What does it mean to live pono in every sense of the word, for us as individuals, as staff, as an organization, and in our relationships and partnerships with all the schools, youth, and families of all our programs? And then also on the food side of it—how does the work we do help our families to live pono? By becoming a resource for families, we can offer access to healthy food as well as a place for restoration or healing.

Finally, we look at ʻāina momona as the fruit of being pono. If our ʻāina is momona then that means that things are pono, that's how we know we are doing things right. Having the ability to choose and to know where our food comes from constitutes a state of pono. Having the ability to engage in the growing of kalo and knowing that our ancestors have been eating this kalo for generations constitutes an act of sovereignty—those physical, everyday acts of resurgence whether we are conscious of it or not—constitute pono. We can talk about political sovereignty and there is importance there but when we think of the things that are most life-

[8] The majority of Kaʻelepulu pond was dredged and filled in the 1960s to be developed into residential lots.

giving for our people, what better act of giving life than providing medicine, healing, and vibrance through food. We're doing our work because we are getting results, and we're also doing it to correct a deficit in people's health. But even if there weren't a deficit, we would still be doing this work because it continues to perpetuate ola.

Ikaika Lum and the Loko Ea Fishpond, at Kawailoa, Waialua

Figure 3. *Ikaika Lum at Loko Ea Fishpond. Photo provided by: Ikaika Lum.*

Practitioner Profile

My name is Ikaika Lum and I was raised between Waipi‘o and Mililani, O‘ahu. I grew up in a military family but it wasn't really military style, it was very much growing up in a Hawaiian setting that was very loving and very open. Even though our parents were brought up in a time when there was a lot of westernization, there were still a lot of cultural ways they were raised in that they passed on to us kids. I grew up with my great-grandmother on my mother's side and it was a beautiful thing. I remember growing up around plants and one of the main lā‘au

around was ʻuhaloa. When someone had sickness in their chest we would gather ʻuhaloa root, boil it down to a certain color, and the ill person would take three jiggers a day. That's how we took care of each other. So I grew up with a foundation of lāʻau and mea kanu.

The one thing that really opened my eyes to the importance of traditional knowledge and practices was taking a Hawaiian botany class at Leeward Community College. Our program had a small plot of land to start a native plant garden. Eventually, I started overseeing the project and I remember thinking, "This is what I love to do, to be outside, I love working with these plants and trying to grow plants." That was when I thought ok, working with native plants is the direction I want to go in.

Loko Ea Fishpond Profile

In 2012, I started working with Loko Ea[9]. Loko Ea is a fishpond in the ahupuaʻa ʻo Kawailoa, moku ʻo Waialua. The Mālama Loko Ea Foundation is the non-profit organization founded by James Estores and Benson Lee that focuses on the restoration of Loko Ea and adjacent ʻUkoʻa fishpond as productive fishponds. Loko Ea is a loko puʻuone which is a natural estuary system utilized as a food source for the community. As a loko puʻuone it was already being utilized by nature to provide shelter to fish that would come in when they were small, grow big, go back into the ocean, reproduce, and continue that cycle. It is just an ingenious system. Kānaka took a close look at these areas, how they worked, how they could be utilized without totally altering the ecosystem, and devised ways to benefit from them.

How has the genealogy of your place influenced the values and practices of Loko Ea?

The two founders, Benson Lee and James Estores, are the kumu who have been 100 percent supportive of our work at Loko Ea. Also influential are the kūpuna from this area who

[9] To learn more about Loko Ea, ʻUkoʻa, and Mālama Loko Ea Foundation, see: https://www.lokoea.org/.

have shared what it was like to grow up around the pond, how the pond functioned, where the various areas of the pond were located, and where the fish used to be in the pond. Their stories give a glimpse into what the pond was like during their lifetime. Their stories also help us determine where we want the pond to be in the future. What did the pond provide in their time? Not just the fish, but what did the pond provide for people in a spiritual sense? I am interested in how Loko Ea was a grounding place for them in their lifetime and how they look back on the pond as a place that was a meaningful time in their lives. My hope for the next generation—that if people come from other places to visit and to work—that when they go back to their own ʻāina they can learn about what was there before. It may not have been a fishpond, but it was some kind of ʻāina that provided something for them. ʻĀina has always provided nourishment in many ways. What was it that made it special? What is it that people remember about certain areas?

What are the major goals of your work at Loko Ea?

Currently, I am the restoration director at Loko Ea. When I first started working here, the goal was to understand how to restore the landscape and utilize certain plants to hold up the soil and add nutrients to the soil. Then my work became looking over the restoration of the fishpond. I knew the basics of loko iʻa and why it was so important, but to actually be here to manage it, like anything else being hands-on and learning by doing is where the ʻike is going to come from. How do I manage the pond? How do I utilize the mākāhā? From water depth to water temperature and water quality. Until today there is still so much to learn.

At Loko Ea, we are really focused on providing a sustainable source of protein to the community of Waialua and the larger North Shore area. We are focused on having the community come and see how the fish are being raised. The community participates in helping the fishpond because it is something that is going to be providing healthy food for their families.

The main goal right now is restoring the pond. The health is there but it needs to be much better so we can start to produce fish. The larger goal is to open up the waterway to ʻUkoʻa fishpond as it once was.

How does Loko Ea produce food and feed the community?

Historically, the majority of loko iʻa provided a year-round source of fish for aliʻi in a place where they didn't have to worry about any kapu—the restrictions that regulated when or where fish could be harvest. The most common fish were moi, ʻamaʻama, ʻanae, and awa. There were also community ponds that people took care of for their source of food. The primary protein source in the ancient times wasn't puaʻa, ʻīlio, or moa, it was fish. Loko iʻa not only provided food for aliʻi and for the community, it also provided nourishment for nearby reef systems and inshore ecosystems.

Currently, at workdays we fry tilapia from the pond to feed the community. Even though tilapia is not the "best" fish, it is mea ʻai, mahalo i ka mea loaʻa. If tilapia is one of the main fish in the pond, it makes sense to use it as a food source and figure out ways to make it taste ʻono. In the future, we are going to get into harvesting the fish monthly and having live fish for the community to pick up and take home. But, the biggest goal right now is maintaining the pond, so that the fish will come. We've also been cultivating produce gardens so we can produce our own food for community workdays. Helping the community understand that healthy food comes from the ʻāina is a big goal for us.

Can you describe the ʻāina-based programming at Loko Ea?

The biggest thing for us is understanding our pond, and understanding our ʻāina and everything around it. We teach about the deities of the pond like the moʻo Laniwahine—how aliʻi went to see this moʻo to pay respects to her. Queen Emma visited the lua to see Laniwahine

and where she lived. General knowledge of these events has faded over time but certain families in the area have hung on to these stories. We share these stories with the different ʻōpio, mākua, and kūpuna who come to Loko Ea so that we can ground them in the history of the area and help them understand the events that took place in the area.

We also teach about the different weather events that affected this area and how we learn from these events to better plan and better manage this pond. The biggest thing we tell students is a lot has changed—the water flow is different so it is up to us to figure out how to manage the pond, how to produce fish with what we have, and how to adapt to the environmental factors that come up. We walk students up the ʻauwai kai. I explain that this is the waterway that the fish make their way up. I ask them to feel the water, feel the flow, and feel the temperature of water. I instruct them to look in the pond and compare it with what they see on the outside of the pond. Our staff puts emphasis on the importance of students building their own observational skills. We have students sit down and listen to the pond, feel the water, feel the wind, and really understand and observe everything around them. We instill in them the idea that it is important to observe everything around them and to remember these observations. This is one of the key components of our educational programming—building the foundational skills of observation so students can take those skills home and begin to observed the patterns of their ʻāina.

How does your organization contribute to the well-being of your community?

The pilina with the ʻāina is something that is special for us. Feeling it, working with it, being around it, being surrounded by it, and being able to access it. That's one of the big things for us on this island because so much has been developed. I look at my own well-being, when I am at Loko Ea; there is no stress. The volunteers who come to help restore the pond say that the place reinvigorates them, it feeds them physically and spiritually. In western ways it is not seen

that way, it is just physical labor. But here, it is an overall health that really grounds the people who comes to work. If they have any kind of pilikia when they come, it is released, they feel good, and they can get on with their lives again. Eventually, when they partake in growing the food and managing the pond, digging in the pond and helping to remove grass, they are helping this food source that is helping the ecosystem thrive. The reciprocal giving and caring creates better health for us all. I give to the ʻāina with the work that I do and the ʻāina shares its nourishment and healing back with me. This sense of unity is what I want ʻōpio, mākua, and kūpuna to experience.

Cheryse Kaui Sana and MAʻO Organic Farms at Lualualei, Waiʻanae

Figure 4. *Cheryse Kaui Sana at MAʻO Organic Farms. Photo provided by: Cheryse Kaui Sana.*

Practitioner Profile

My name is Cheryse Kaui Sana and I am from Waiʻanae, Oʻahu. I grew up in Waiʻanae, but for the first seventeen years of my life I never went to the back of the valley. I grew up always being proud of being Hawaiian but I didn't know why. I just knew that being Hawaiian was one of the best things to be even though I didn't grow up with cultural practices or ʻōlelo

Hawai‘i. I am the oldest of seven children so I’ve always felt like I had a lot of kuleana to be a really good role model for my siblings.

When I graduated from high school I was looking for a way to get to college. I was not prepared to apply for any kind of financial aid or scholarships. I loved Wai‘anae High School but at that time there wasn’t a lot of preparation for those kinds of things. I heard that MA‘O Organic Farms[10] (MA‘O) could pay for college and I would get a stipend for working at the farm, so I got introduced to MA‘O by doing a high school internship. I thought, I don’t mind working outside, I’ll get my associate’s degree and transfer to UH Mānoa Kamakakūokalani Center for Hawaiian Studies[11] because I felt there was a void somewhere within me. I wanted to figure out who I was and who my ancestors were. I hoped that by choosing to go through the Hawaiian Studies program, something would come out of it and I believed that I would find myself that way.

MA‘O Organic Farms Profile

MA‘O is part of a non-profit organization founded by Gary and Kukui Maunakea-Forth. MA‘O has been around for 17 years and I have been on the farm for 11 years now. MA‘O is an acronym for Māla ‘Ai ‘Ōpio which is the food youth garden. We grow USDA certified organic produce and we also offer a Youth Leadership Training Program for young adults in our community. This Youth Leadership Training Program provides students a full tuition waiver to attend community college, as well as a monthly stipend starting at $500.

How has the genealogy of your place influenced the values and practices of MA‘O?

I was fortunate to have Gary and Kukui Maunakea-Forth as my mentors in this radical movement of getting youth to grow organic food. They introduced this culture of food, this

[10] To learn more about MA‘O Organic Farms, see: https://www.maoorganicfarms.org/.
[11] To learn more about the Kamakakūokalani Center for Hawaiian Studies at the University of Hawai‘i at Mānoa Hawai‘inuiākea School of Hawaiian Knowledge, see: https://manoa.hawaii.edu/hshk/units/kamakakuokalani/.

culture of aloha ʻāina, and this culture of community that I hadn't really experience before, so I kind of fell in love with this place. The longer I was in the program, I looked at the mountains more, I connected to the land more, and my hands got dirty. The more I was around my peers in my cohort and we started to grow food, I could see in real-time the success of hard work. I could plant something and in about three to four weeks I was harvesting it, eating it, or selling it at farmers' market. When MAʻO went to the market, it felt like people were relying on us for food. Having that kind of kuleana in my life started to awaken something within me.

When MAʻO started, we had Papa Aila (Willam Aila Sr.) and he was the kupuna of the farm. Kūpuna are really good at scolding us but showing that they love us so much. It was something I didn't have growing up so I really appreciated him. He taught me so much about hard work. One of his life mottos about success in life is to have love, respect, and the willingness to work. So I hold that dear to my heart and MAʻO also holds that motto dear to its heart. This is another way of saying aloha ʻāina.

How does MAʻO Organic Farms produce food and feed the community?

A lot of industrialized food systems are focused on producing plants only, so chemical fertilizers and pesticides are used. As indigenous people, we know that in order to grow food, we must build the environment for healthy soil, insects, and birds. At MAʻO, the fields are filled with diverse plants and trees because caring for the entire ecosystem is what our ancestors have done for generations. Because we cultivate food in this way, MAʻO has been United States Department of Agriculture (USDA) certified organic for the past 15 years. How we grow food is an act of aloha ʻāina.

Our farm system is based on crop rotation. We have 10,000 square feet of field intercropped with citrus, mango, banana, and madre de cacao plants. Every field is different—we

cultivate lettuces, kales, root vegetables, eggplants, peppers, basil, and onions to name a few. We also focus on growing our indigenous food such as coconut, kalo, and ʻulu because we want to acknowledge the importance of the food of our ʻāina.

To distribute the food, we have wholesale accounts with local grocery stores and we sell to local restaurants on Oʻahu as well. We also sell at our local farmers' markets where our students, interns, and managers have face-to-face conversations with the community. That's part of the way that the youth learn to talk about the produce that they grow. We also have a CSA (community supported agriculture) subscription box. Our members subscribe weekly or every other week to a box of veggies. In their boxes, they get the premium produce grown on the farm. The interactions that the interns have with our customers really start to break down the industrial food system that most of us have been raised in; a food system void of interactions between farmer and consumer. At MAʻO, we are rebuilding what we want our food system to look like. We want our interns and customers to share in the hardships and joys of growing, eating, and sharing food. We want them to know the stories of the food that they eat, such as who grew their food, how they grew it, and when it was grown. These are all critical elements to the kind of healthy food system that we are trying to build.

Can you describe the ʻāina-based programming at MAʻO Organic Farms?

Currently, I am one of the farm managers and I help to oversee the Youth Leadership Training Program of the college interns. We mentor and teach young adults about organic production and how to balance going to college and working on the farm. MAʻO's mission has always been to grow fresh organic food and to grow leaders. What MAʻO has done is create safe spaces so young adults from the Waiʻanae community can have guidelines and mentors and peers to learn a good work ethic. We are getting these young adults to run the farm production—

this involves washing, harvesting, weeding, packing, and planting. We want them to understand the balance of working and going to college because we want them to get good grades. I believe that the mentorship and the resources MA‘O provides have been one of the best ways for young adults to succeed in life. MA‘O’s mission has always been to build reciprocal relationships with the young adults in our community—we will help them get to college but we rely on them to help grow food because our families need it, our communities need it, and Hawai‘i needs it.

What we are finding in our community’s high schools is that many of our young adults are unprepared for college. Some young adults are brought up in a culture where it is ok to fail. This is a disappointing cycle. Though we have those challenges, we still believe in these young adults. We may have a valedictorian come into the program, but we also want to help students who need remedial classes. We want to get all students to a level of excellence and discipline necessary for success. This expectation can be challenging because some of these young adults come with a lot of baggage with their families or friends. Being raised in poverty is a major hardship. It is important to have a space where we can help to break some of those mentalities. When these young adults start to see that they actually have the power, the intelligence, and the physicality to do some of the seemingly impossible things they never thought they could do, to me that’s a win. Getting these young adults to graduate with their associate’s degrees is an accomplishment. But if some of them get to finish two semesters on a positive note, that is also a success.

How does your work at MA‘O contribute to the well-being of your community?

The work that I do at the farm is really important to me. I am passionate about it because I can work directly with the young adults in our community. Young adults in their late teens/early twenties are in a critical time to learn about themselves. At MA‘O they have mentors

around them and peers in the same path and journey. The work that I like to see myself doing is being a mentor and spending time with young adults to help them begin their journey of understanding their kuleana—both to themselves and to others—they begin to figure out what they're good at and how that can help benefit their families and their communities. I like to have real conversations with people about their futures. Everyone has different challenges but we all want to prosper and be successful. We all want healthy families, we want to live happy lives, and we want to be in safe spaces. I feel that my role as a mentor and as a leader benefits them as well as myself. I say I'm a mentor to them but they're definitely mentors to me because they bring up different challenges that I've never experienced before and we get to tackle them together.

If MA'O can foster these reciprocal relationships while we are grow food and feed people, that's a plus—people heal spiritually, mentally, and physically. As for the 'āina, I think she has the ability to heal herself. It is us who really needs healing. So working with young adults and seeing them transform their lives has always been so humbling for me. As for my own growth, I know that I can mentor others only if I am constantly improving myself. There is always something new for me to learn, something new for me to improve on. That is why I love being a part of this organization—we're constantly holding each other accountable. It is a challenge to face my own ego but it is so amazing when the land and the relationships I have with people and with food show me that I don't know everything.

Every time I come up to this farm and I look at the mountains and feel the Kaiāulu breeze I feel that I'm walking with my ancestors. I feel proud to know that I'm continuing to grow food. Being able to touch the soil is a statement. To grow food is a political statement because there are plenty of people saying that we can't grow food in Hawai'i, especially organic food. But I think what our ancestors were good at was feeding themselves and understanding their place in

the environment. I'm trying to get to that state of being as well. In my environment at MA'O, I'm on a tractor, I'm harvesting salad at five o'clock in the morning, and I'm feeding people. This is my place in the environment.

I find myself in the service of people's growth, of the land's growth—showing true aloha and service to the well-being of everyone's spiritual, physical, and mental growth. Our interns are getting healthier and they have access to good fresh food that they can share with their families. When we have young adults succeeding and continuing the legacy of love, respect, and the willingness to work. I feel like our community is being uplifted.

Ku'uleilani Samson and the Hoa 'Āina O Mākaha Organization at Mākaha, Wai'anae

Figure 5. *Ku'uleilani Samson at Hoa 'Āina O Mākaha. Photo provided by: Ku'uleilani Samson.*

Practitioner Profile

My name is Kuʻuleilani Samson and I was born and raised in Waiʻanae, Oʻahu. Since little-kid time, if my little brother and I weren't at the beach, we were outside in the yard making mud pies. I have always loved being dirty and getting in the ʻāina.

In high school, I was introduced to MAʻO Organic Farms (MAʻO). MAʻO was the perfect stepping stone for me to get to college. When I got to MAʻO, I ended up falling in love with the ʻāina. I was there for eight years and I am grateful for everything I learned and the struggles I had to overcome. I got so deeply rooted at MAʻO that I didn't want to leave the ʻāina. So, I took a little bit longer to graduate with my Bachelor's degree. It took me five years because I decided to have some babies along the way. Watching the ʻāina grow food and watching my children growing alongside the ʻāina has definitely been a passion of mine. It is clear that this was something I was meant to do—to help life grow.

When I was at MAʻO, I learned that the ʻāina heals. I realized that, not only can people be mentors but spiritual things, things that are living, things that are breathing, things that are around us, can also be mentors if we pay attention enough. Sometimes I feel super weird telling other people to "listen to the tree, the tree tells you things" or "listen to the mauna, she is talking right now." Some people get it and some people don't. It's when people are ready to open their ears and open their eyes, that they finally understand the power of the ʻāina to guide them.

Hoa ʻĀina O Mākaha Profile

My journey at Hoa ʻĀina O Mākaha[12] started at Mākaha Elementary School. Mr. Gigi, the founder of Hoa ʻĀina O Mākaha was my garden teacher. Hoa ʻĀina O Mākaha has a 40-year history in Mākaha on the Waiʻanae coast which has grown beautifully with help from the

[12] To learn more about Hoa ʻĀina O Mākaha, see: https://www.hoaainaomakaha.org/.

Wai‘anae community. Aunty Puanani Burgess, a respected kupuna from Wai‘anae, gave the farm the name Hoa ‘Āina O Mākaha. This can be translated to “the land shared in friendship in Mākaha.” Our mission statement is: Creating peaceful communities in harmony with nature through the eyes, hands, and hearts of the keiki.

Can you describe the ‘āina-based programming at Hoa ‘Āina O Mākaha?

The farm is our classroom and the lessons with students are limitless. We can open a papaya, taste the papaya, and then go plant and harvest papaya. We can harvest lettuce and make a salad dressing on the bike-blender which is a non-electric blender attached to a stationary bike. The students have to pedal the bike in order to blend the ingredients for their salad dressings or fruit smoothies. We can do all these amazing things because the ‘āina provides the ingredients. Some of the program areas that we teach at the farm are Hawaiian studies, how to care for farm animals, agriculture, and renewable energy.

Everyone says that the keiki are the future leaders. So when we send them home with knowledge about how to plant seeds or how to make their own salad dressing with the herbs they have picked from the farm, we know that they are going to share that knowledge with their parents. When parents see their keiki are interested in planting seeds and growing food, those parents also get interested and want to be involved. This kind of engagement ties into the programs that we offer like our Container Garden Program[13] which is a free program for the whole family. We want parents to bring their kūpuna and keiki to the farm and experience getting their hands in the soil. We want to help ‘ohana get their gardens set up and plant some

[13] As described on the Hoa ‘Āina O Mākaha website, “The Container Garden Program is designed to teach community members and families how to connect back to the food they are eating by growing it themselves. The workshops are free, we provide all the materials to start and maintain your own garden at home in pots. Pots allow for easy care and are great because of their ability to be mobile and they take up little space” (Hoa ‘Āina O Mākaha, 2019).

seeds so they can eat what they harvest. If parents are able to cut out 20 dollars from their grocery bill by feeding their ‘ohana with home grown food, then that is success.

How does Hoa ‘Āina O Mākaha produce food and feed the community?

When fruit and vegetables are harvested on the farm, our team takes them to the farmers’ market. Instead of putting a price on our produce, we put out a can that says *take what you need, leave what you can* and people can choose to make a donation for what they take. Being someone who grew up on welfare and not having a lot of money, I felt ashamed when I had to pay for something. Knowing that others are in the same predicament, I am not going to hold my hand out for money. I let people donate whatever they can and I have bags for them to fill with as much produce as they need. Sometimes people don’t want to take anything because it is free. Sometimes people fill up a whole bag and give a dollar because that is all they can afford at the time. Sometimes people take two things and leave twenty dollars. That is the beauty of it, providing food for our community in a way that they don’t feel ashamed or pressured.

The most important thing at Hoa ‘Āina O Mākaha is the education that we make available to people who come to the farmers’ market. When we take food to the farmers’ market, it is not just for people to take home, we really want to talk to them about the produce we brought and how they can prepare it. We want to allow them to taste the food and learn about how to grow it. Ultimately, we want to educate our community so they are not afraid to take on a new challenge such as growing something they have not grown before. For example, last week we took eggplant, lūʻau and hā, sugarcane, and ‘ulu to the market. A lot of people came to our tent and said they knew exactly how they were going to prepare the food. All the old-school people said, “We haven’t had sugar cane since little-kid time, not even our kids tried it before!” They were so happy because their kids got to experience something that they experienced as

children. One aunty came back the next week and told us how she taught her kids how to dissect the sugarcane stalk and eat it. They came back to the farmers' market to get more! They got to experience something together as a family—that was an experience that could not be bought at a store or off the internet. Passing down family traditions and making memories as a family through the medium of food is something unique. We were so happy to be able to provide this kind of experience.

When people feel comfortable enough to take a plant home to grow it or cook it for their families, this is the biggest win. For them to come back and tell us, "That was actually good, my kids loved it!"—I know that we have planted a seed.

How does your organization contribute to the well-being of your community?

The main thing for us at Hoa ʻĀina O Mākaha is establishing relationships with community members so that they feel comfortable coming to the farm. People come back to repeat the Container Garden Program and they have plenty of questions. We get to re-educate them about things like how to keep the slugs from eating their plants. Growing food can be a gamble because Mother Nature knows how to win. But we try to instill in people that once they become one with her and know how to work with her and not against her, then they are able to reap what they sow. We try to show our community how simple growing food can be.

This coming year, we are going to make 40 years on the farm. Knowing that Mr. Gigi, an Italian man not even from Hawaiʻi, came from so far away and put so much love and so much spirit into a little piece of land in Mākaha, I wonder what would happen if we put that kind of love into all of Hawaiʻi?

Summer P. Maunakea and the Kōkua Hawai‘i Foundation ‘ĀINA In Schools Program

Figure 6. *Summer Maunakea prepping native kalo varieties for O‘ahu’s public schools. Photo provided by: Summer Maunakea.*

Practitioner Profile

Some of my favorite memories growing up on O‘ahu are canoe paddling and spending summers at different beaches around the island. I remember being in the ocean all day with my older brothers, my parents, and our extended paddling family. As a young child, I remember identifying each side of the island by the characteristics of the sand. Ma‘ili beach on the Wai‘anae side with the scorching hot sand that my dad had to carry me over when I lost my slippers. Waimānalo beach with the fine sand that whipped my sunburnt back when a gust of wind would hit. Kailua beach with the super fine sand that got stuck in my curly hair for days.

When I was in middle school I started surfing and I grew a stronger connection to the ocean. Until this day when I go out surfing in Waikīkī, I look back towards land as the sun rises

behind the mountains in the early morning and I can feel the connection once shared by our ancestors. It reminds me of my place and my kuleana here on Oʻahu.

I went away to college in California and Australia, mainly to surf. I learned a lot about myself along the way which happens, I guess, when someone spends a lot of time alone on planes and trains or in the middle of the ocean on a surfboard. Wanting to explore a career in education, I started working as a preschool teacher on the Gold Coast of Australia. The school I worked at had a garden educator who would come twice a week to deliver garden and composting lessons in the school garden. I like to say that I learned how to grow food from my five year-old students because I didn't grow up doing those sorts of things. When I moved home to Oʻahu I was passionate about deepening my relationship to the ʻāina and to our traditional food because I knew the key to my family's well-being was in that relationship.

At the start of my graduate studies at University of Hawaiʻi at Mānoa (UHM) College of Education, I was hired at Ka Papa Loʻi ʻo Kānewai. It was at Kānewai that I learned about traditional food systems that fed Kānaka ʻŌiwi for centuries before foreign contact. I also learned about the genealogical connection we share with kalo. I gained this knowledge firsthand by growing different native varieties of kalo, bringing life to the lepo, and caring for the waters that flowed from the back of Mānoa Valley out to the ocean at Waikīkī. I felt responsible for carrying on the teachings of the kūpuna that poured their time and knowledge into the place. I loved providing learning experiences for others to get their hands and feet in the lepo and connect with such a special and sacred place to many of us here on Oʻahu.

One of the foundational principles of Ka Papa Loʻi ʻo Kānewai established by Hui Aloha ʻĀina Tuahine—the Hawaiian language student group that helped restore the loʻi—was that Ka Papa Loʻi ʻo Kānewai was to be a safe place for people to come and learn different cultural

practices and take back what they learned to positively impact their own communities. As time went on, a desire within me grew to share and integrate the teachings about kalo and Hawaiian food systems into the school setting.

Kōkua Hawai‘i Foundation Profile

In 2015, I was brought onboard at Kōkua Hawai‘i Foundation (KHF)[14] as an educational specialist and school garden coordinator for the ‘ĀINA In Schools Program. KHF is an environmental education non-profit organization founded in 2003 by local singer-songwriter Jack Johnson and his wife Kim Johnson. The ‘ĀINA In Schools Program is a farm to school initiative that focuses on connecting students to their local land, food, and waters to grow a healthier Hawai‘i by cultivating environmental stewardship, addressing childhood health, and promoting a healthy local food system. ‘ĀINA, meaning land and that which feeds, is also an acronym for our program—**A**ctively **I**ntegrating **N**utrition and **A**griculture in schools.

Can you describe the ‘āina-based programming of the ‘ĀINA In Schools Program?

I am part of a dynamic and compassionate team that is dedicated to growing healthy food, keiki, and communities. Some of the things I do are

- teach K-6 grade students the process of growing and eating local and organic fruits and vegetables from their school gardens,
- train parents and community members to go into the classrooms of their children and teach the ‘ĀINA In Schools Programs’ garden, nutrition, and composting lessons, and
- partner with the Hawai‘i State Department of Education to teach professional development courses and train teachers on how to integrate ‘āina-based learning into their teaching practice.

[14] To learn more about Kōkua Hawai‘i Foundation, see: https://kokuahawaiifoundation.org.

It is a joy witnessing new and veteran teachers evolve in their teaching beliefs and pedagogy—bringing relevance to academic subjects through hands-on learning and cultural practice. Every day I wake up I am grateful that I get to teach students, teachers, and families the knowledge and practices about which I am passionate. I really see the work we do as part of a larger movement to change the culture of schooling across Hawai‘i.

How does your organization contribute to the well-being of your community?

A story from last year's kalo harvest best answers this question. It was May 2018 at Ala Wai Elementary School in Honolulu. Fourth-grade students had just wrapped up a year of growing Hawaiian plants. After harvesting their kalo, students sorted the different varieties, and then prepared a few dishes. I brought my papa ku‘i ‘ai and pōhaku ku‘i ‘ai to demonstrate how to process kalo. As I got started, we engaged in discussion. I asked the class: If poi is available to be purchased in grocery stores and farmers' markets, why would it be important to continue to grow and prepare it in this way? The students discussed possible answers among themselves and one girl responded, "Is it because when you pound it yourself you remember how your ancestors did it?" Another student said, "It's fresher because it is "close to the source" and nothing has been added to it." Another student added, "To carry on the Hawaiian culture," and another replied, "Just like how we watered each kalo ten seconds a day, you are putting all your love into making it."

As I wrapped up, we talked about family. I explained that in my family, my father does all the cooking and grocery shopping. I was taught that what I feel in my na‘au, as well as my thoughts and emotions, get transferred into the food that I prepare. I spoke about how my father is one of the most peaceful and loving human beings in this world. He doesn't have any enemies, only love and acceptance for others. He puts all his good intentions and healing thoughts into the

food that he cooks for our family. I asked them, "How do you think it tastes? How do you think my mother, brothers, and I feel when we eat it?" "Good! Happy! Healthy!" They all yelled out.

I explained how ku'i kalo is a Hawaiian tradition of preparing food that was lost in my family for a few generations and that only in the last five or so years have I learned each stage of the process. I said that my family now grows kalo and makes poi. This makes by parents very happy. More so, I explained how fulfilled I am that students are learning the living culture of Hawai'i through growing food, reducing waste, and cultivating a special relationship with the 'āina. As students served the fresh pa'i 'ai, lū'au, and steamed sweet potato from their Hawaiian garden, we engaged in another discussion about family traditions. They described the kinds of food they eat in their families and the traditions they carry on. The students proudly shared their hand-grown-with-love Hawaiian food and took home plants to grow with their families. It was such a beautiful way to end the school year.

Conclusion

> An essential determinant of the social and economic well-being of any group is its connectedness. When a group is connected, it flourishes. (Maaka, 2004, p. 3)

In our collective voice, the co-researchers and I discuss how our upbringings have guided us to 'āina- and community-based work. Kaui and Ku'uleilani describe how a MA'O internship presented them with the opportunity to go to college and learn about Hawaiian culture, all while growing organic produce and cultivating a relationship with their place. We discuss how we grow food and nourish people through the education, mentorship, and leadership models of our 'āina-based efforts. We also discuss some of the challenges we face. Danielle discusses the challenges in her community to overcome the sense of shame for not being brought up in the cultural practices of mahi 'ai kalo. She also describes the generosity of the land and

Hoʻokuaʻāina to provide the ability for families to grow kalo at their homes. Finally, we celebrate how our work contributes to the physical and spiritual well-being of the ʻāina and people. Ikaika and I discuss the healing nature of the ʻāina to remove stress and nurture a sense of belonging and responsibility between people and the ʻāina.

Evident in our stories is the deep intention to perpetuate the love our kūpuna had for their places and their ingenuity in maintaining systems of balance and nourishment. Although island living has changed dramatically since the time of fully functioning ahupuaʻa systems, there is much for us to learn from the interactions our kūpuna once had with their ʻāina. We understand that the environmental and societal challenges we face today and in the future, such as climate destabilization and limited access to nutritious food, will be much different from those that our kūpuna had to overcome. The co-researchers and I believe that the restoration and healing of our communities and our ʻāina are found within reciprocal unity with each other. In our collective work we have the responsibility and agency to pursue such renewal. *I ola kākou i ka hoʻolōkahi.*

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PŪ‘OLO FIVE

‘ĀINA-BASED PEDAGOGIES IN HAWAI‘I SCHOOLS:

KŌKUA HAWAI‘I FOUNDATION’S ‘ĀINA IN SCHOOLS PROGRAM

Introduction

‘Āina-based education[1] is a growing movement in Hawai‘i (Hawai‘i Leadership Forum, 2019). It is now common for teachers to take students on ‘āina-based field trips to sites such as native forests, reef systems, lo‘i kalo[2], loko i‘a, and farms. Students also engage in ‘āina-based education through field trips and school intersession programs where practitioners guide learners in cultural practices that restore and maintain the ‘āina as a source of nourishment (Blaich, 2003). Learning through immersion in Hawai‘i’s ecosystems has helped to foster aloha ‘āina—a practice of cultivating sacred relationships between people and place, characterized by the fundamental principles of respect and reciprocity. In Hawai‘i, the reciprocal relationship between Kānaka ‘Ōiwi[3] and the ‘āina is one of familial kinship and it encompasses an active exchange of mana. The ‘āina provides wisdom and the necessities for survival. Kānaka ‘Ōiwi actively care

[1] How learners engage in ‘āina-based education is guided by ‘āina-based pedagogies. ‘Āina-based pedagogies are dynamic and interdisciplinary processes of learning and teaching that hail from the natural landscapes and oceanscapes of Hawai‘i’s environment. These processes, which emphasize a reciprocal relationship between Kānaka ‘Ōiwi and the ‘āina, draw upon place-specific intergenerational knowledge systems, language, and customary practices to frame curricula for all learners. The term pedagogy is more often used in its singular form. Across ka pae ‘āina Hawai‘i there are similarities in the implementation of ‘āina-based education such as an emphasis on the relationships between kānaka and ‘āina, a focus on sustainability, and a blend of both ancestral knowledge and foreign tools and frameworks. However, depending on the context, content, and purpose of implementation, the instructional strategies differ significantly. Therefore, the term “pedagogies” is used in order to be inclusive of the diverse learning contexts and approaches used in ‘āina-based education.

[2] ‘Ōlelo Hawai‘i, Hawaiian language, words and phrases are used throughout the text. If English explanations for Hawaiian words are needed, see: Pukui M. K., & Elbert S. H. (1986). *Hawaiian dictionary: Hawaiian-English, English-Hawaiian (revised and enlarged ed.)*, Honolulu, HI: University of Hawaii Press. Alternatively, search www.wehewehe.org.

[3] Throughout the text, the terms: Kānaka ‘Ōiwi (pural), Kanaka ‘Ōiwi (singular), and Hawaiian are used to describe descendants of the native people of ka pae ‘āina Hawai‘i. Kanaka ‘Ōiwi and Hawaiian are also used as adjectives.

for the ʻāina through cultural practice and ceremony so that it may continue to regenerate and live on.

While it is important to immerse students in the rich history and culture of Hawaiʻi's sacred places, it is equally important to teach students that the ʻāina is their backyard—or schoolyard. The nature of this knowledge allows students to be self-reliant and exist in a sustainable context without having to rely on outside sources to provide for all of their basic needs. Such mutual relationships among students, the ʻāina, and their communities may influence the practice of aloha ʻāina in everyday life.

The Growing Presence of School Gardens

In Hawaiʻi's educational institutions, ʻāina-based learning has gained popularity through the growing presence of school gardens on campuses (Hawaiʻi Public Health Institute, 2019; Koh, 2012). School gardens are utilized as outdoor classrooms for a variety of reasons. In particular, they are used as instructional tools to bring relevance to academic subjects. Hirschi (2005) explains:

> A school garden can mean food production to supplement school meals, food education to promote healthier food choices for children and families, an experiential learning or project-based learning tool for teachers, an ecosystem for observation and exploration, an ambient gathering place for the school community, or a service learning resource. In practice, school gardens are often a combination of all of these, and they all have the potential for aiding children's learning. (Hirschi, 2015, p. 4)

The multi-disciplinary appeal of school gardens makes them valued additions to the design of schools. During the 2017-2018 school year, the Hawaiʻi State Department of Education

(HIDOE) reported that 87 percent of public schools utilized school gardens as an instructional tool to teach Hawaiian studies, science, language arts, health, special education, and career and technical education (Hawai‘i State Department of Education, 2018). This movement has gained momentum due to pedagogical foci on sustainability, project-based learning, and place-based education (Hawai‘i State Department of Education, 2012; 2016).

An Opportunity for ‘Ōiwi Agency

The growing presence of school gardens and interest in ‘āina-based pedagogies presents an opportunity for Kānaka ‘Ōiwi to define and guide ‘āina-based education in academic institutions. Therefore, the aim of this article is to explore school gardens and farm to school[4] programming as a platform for ‘āina-based education. I will focus my discussion on my role within the ‘ĀINA In Schools Program, a farm to school initiative of the Kōkua Hawai‘i Foundation, to teach ‘Ōiwi knowledge and cultural practices in schools. This pū‘olo describes

- the mission of Kōkua Hawai‘i Foundation,
- how the ‘ĀINA In Schools Program operates in Hawai‘i’s schools and communities, and
- the transformative outcomes observed as a result of participation in the ‘ĀINA In Schools Program.

Positionality: Kanaka ‘Ōiwi Educator, Mahi ‘ai, and Scholar

I approach this research through three lenses: as a Kanaka ‘Ōiwi educator, a mahi ‘ai, and a scholar. For the last four years, I have been privileged to work alongside students, teachers, principals, parents, and community members in my role as the Educational Specialist and School Garden Coordinator. I have found that farm to school programming—specifically school

[4] According to the National Farm to School Network (2017), farm to school focuses on three components: school gardens, education, and procurement—the practice of sourcing local food for schools or preschools. Farm to school is a movement that provides agriculture, health, and nutrition education opportunities, such as school gardens, farm field trips, and cooking lessons to schools and communities.

gardens—provides a vehicle to teach ʻāina-based education across the school community. In my role as Educational Specialist, I offer teachers professional development opportunities to incorporate ʻāina-based education and farm to school programming into their teaching praxis. As the School Garden Coordinator, I cultivate soil and teach keiki how to grow their own organic food. In this role, I also work closely with teachers to develop and implement ʻāina-based curricula and to use the school garden as an outdoor classroom. As a Kanaka ʻŌiwi, my kuleana is to sustain the cultural food and healing practices of my kūpuna by integrating these teachings in everyday life. The larger vision of the work that I do involves helping the people I teach to connect with themselves, their communities, and the ʻāina in order to catalyze the agency needed to foster a more pono existence. All this work coalesces into a foundation upon which I engage as a scholar focused on producing research that helps to improve the health of both Kānaka ʻŌiwi and the ʻāina (Maunakea, 2016). My work in all of these roles allows me to perpetuate the values and teachings of my kūpuna, currently through Kōkua Hawaiʻi Foundation's ʻĀINA In Schools Program.

Mission and Overview of Kōkua Hawaiʻi Foundation

Kōkua Hawaiʻi Foundation (KHF) is a 501(c)3 non-profit organization founded in 2003 by singer-songwriter Jack Johnson and his wife Kim Johnson, to support environmental education in Hawaiʻi schools and communities. In addition, KHF strives to provide students with experiences that will enhance their appreciation and understanding of the environment and become lifelong stewards of the earth (Kōkua Hawaiʻi Foundation, 2019). KHF is comprised of five programs available to all Hawaiʻi schools. Each program, including the ʻĀINA In Schools Program, aligns with the overarching goal of improving relationships between people and place.

3R's Recycling Program

The 3R's School Recycling Program empowers students to engage with and educate their school communities about the 3R's—reduce, reuse, and recycle. The program provides participating schools on Oʻahu with educational resources, training sessions, and materials to support on-campus recycling efforts, and hosts recycling drives on school campuses. Host schools receive the proceeds from collected recyclable material such as HI-5 cans and bottles, metals, and used cooking oil. The 3R's Program also guides students in conducting waste audits to help reduce the amount of waste on their school campuses.

Plastic Free Hawaiʻi

Plastic Free Hawaiʻi provides resources, tools, and training sessions to educate schools, business partners, and community members about the environmental and health benefits of minimizing single-use plastics on the islands. The program supports communities and schools in coordinating beach cleanups, film screenings, and docent training sessions to deliver Plastic Free Hawaiʻi educational presentations. KHF also mentors students to write and deliver testimony to influence policy around minimizing the use of single-use plastics.

KHF Field Trip Grants

Kōkua Hawaiʻi Foundation Field Trip Grants help bring students to outdoor sites where they can experience hands-on learning about Hawaiʻi's environment. Every Hawaiʻi school (Pre-K through 12th grade) is eligible to receive up to $1000 per school year to visit outdoor sites and learn from cultural practitioners, community experts, and food producers. Outdoor sites such as loʻi kalo, loko iʻa, conventional farms, nature centers, and native forests are among the popular sites chosen by teachers.

KHF Project Grants

Kōkua Hawai‘i Foundation Project Grants fund projects and teachers at every Hawai‘i school (Pre-K through 12th grade) to assist in advancing their environmental goals in the classroom. The program offers assistance of up to $1000 per school year to schools which otherwise could not purchase items or services. Some of the common items that teachers purchase are school garden supplies such as garden beds, garden tools, native plants, aquaponics systems, cooking appliances, and registration fees for educators to attend farm to school and sustainability professional development courses.

The ‘ĀINA In Schools Program

The ‘ĀINA In Schools Program connects keiki to their local land, food, and water to grow a healthier Hawai‘i. The program addresses childhood health, fosters environmental stewardship, and supports a healthy food system by **A**ctively **I**ntegrative **N**utrition and **A**griculture in schools, hence the ‘ĀINA acronym. Now in 2019, the ‘ĀINA In Schools Program is partnering closely with 23 public and charter elementary schools on O‘ahu to deliver farm to school programming: ‘Āhuimanu, ‘Aikahi, Ala Wai, Blanche Pope, Hale‘iwa, Hau‘ula, Ka‘a‘awa, Kāhala, Kahuku, Kainalu, Kamaile Academy, Ka‘ōhao, Ke Kula ‘o Kamakau, Keolu, Lā‘ie, Liholiho, Mililani Uka, Nu‘uanu, Solomon, Sunset Beach, Wai‘alae, Waialua, and Waikīkī.

Six integrated program components make up the design of each school’s program: nutrition education, garden-based learning, healthy food on campus, agricultural literacy, waste reduction, and family and community outreach. In addition to encouraging the use of locally grown fruit and vegetables in school meals and snacks, the program includes academic standards-aligned nutrition, garden, and compost curricula. The ‘ĀINA In Schools Program also

provides field trips to local farms, chef cooking demonstrations in classrooms, as well as composting, gardening, and cooking educational opportunities for families and community members. Combining the ʻĀINA In Schools Program practices allows teachers to empower their students to learn the skills of growing their own food, making wise food decisions, and reducing waste. Figure 1 provides a visual representation of the ʻĀINA In Schools Program components, goals, and outcomes.

The following sections describe the program components in depth. Each section also presents the voices of program participants who describe the transformative outcomes I have observed as a result of the ʻĀINA In Schools Program.

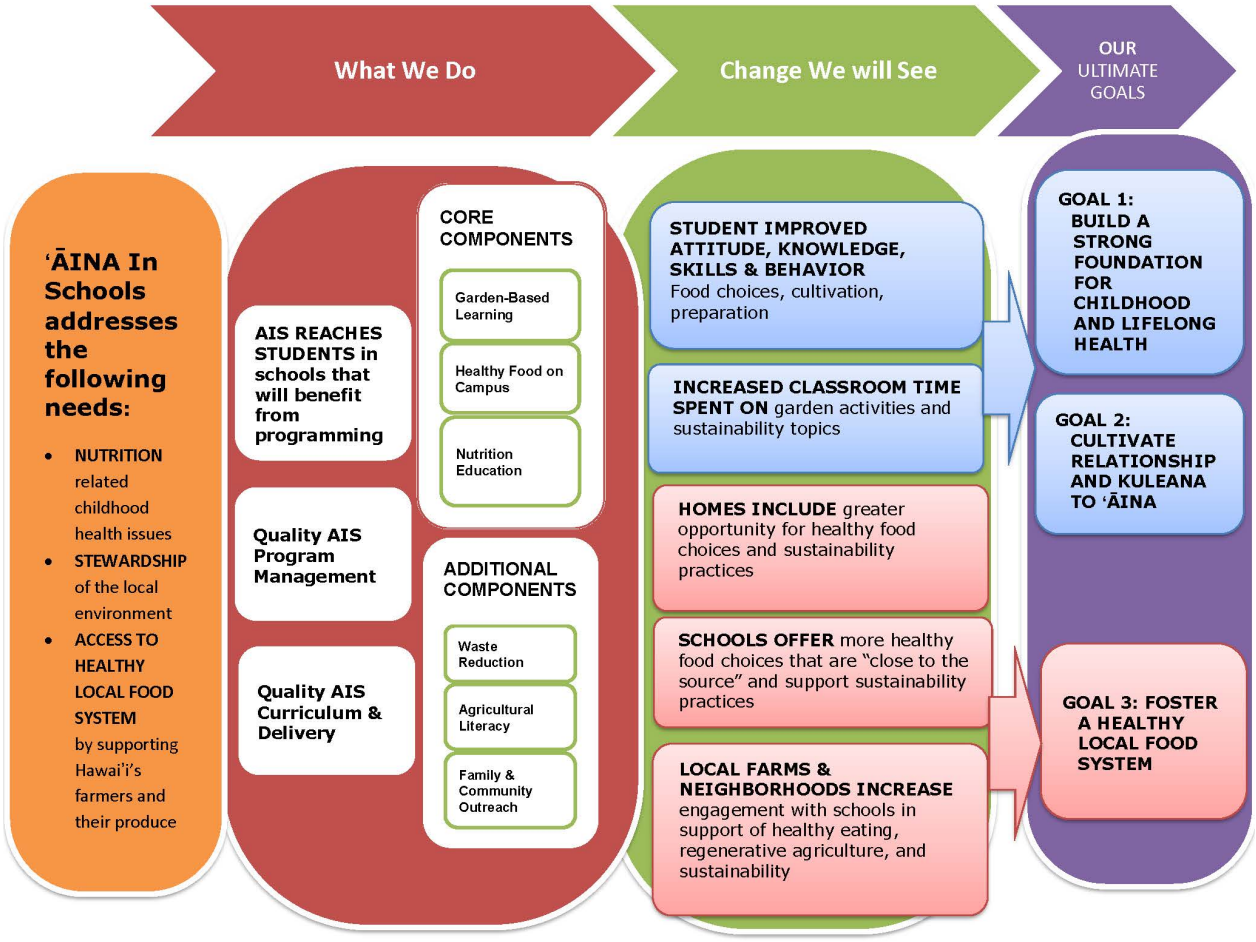


Figure 1. The ʻĀINA In Schools Program evaluation plan logic model developed by Dr. Genevieve Manset and KHF Staff

The ʻĀINA In Schools Program Curriculum

The ʻĀINA In Schools Program serves as a resource for schools and communities to engage in the many benefits of farm to school programming. The core of the program has been the development and implementation of the ʻĀINA In Schools Program curriculum. The curriculum includes ten standards-based, interdisciplinary units written for Kindergarten through grade six students, however, each unit is readily adaptable for Pre-K through high school. Each summer, the curriculum is edited and updated to include feedback from those who teach the lessons. Through nutrition, garden-based, and composting experiential learning activities, students cultivate their own unique relationships and responsibilities to Hawaiʻi (see Figure 2 for the key concepts covered in the ʻĀINA In Schools Program Curriculum).

Nutrition Education

The nutrition education component engages students in nutrition lessons that emphasize choosing food that is good for both human and environmental health by eating local, "close to the source", high-quality whole food. "Close to the source" describes food from nature that has had little taken away or added to it. The curriculum empowers students and families to try new food and make healthy choices. The foundation of the nutrition curriculum is the ʻĀINA Food Guide (see Figure 3) which includes food that is grown in Hawaiʻi or commonly found in Hawaiʻi. The key concepts of the nutrition curriculum are

- choosing "close to the source" food,
- becoming aware of the environmental impacts of food choices,
- reading food labels and finding "red flag" ingredients,
- measuring portion sizes and understanding body cues of hunger and satiation, and
- analyzing food advertisements.

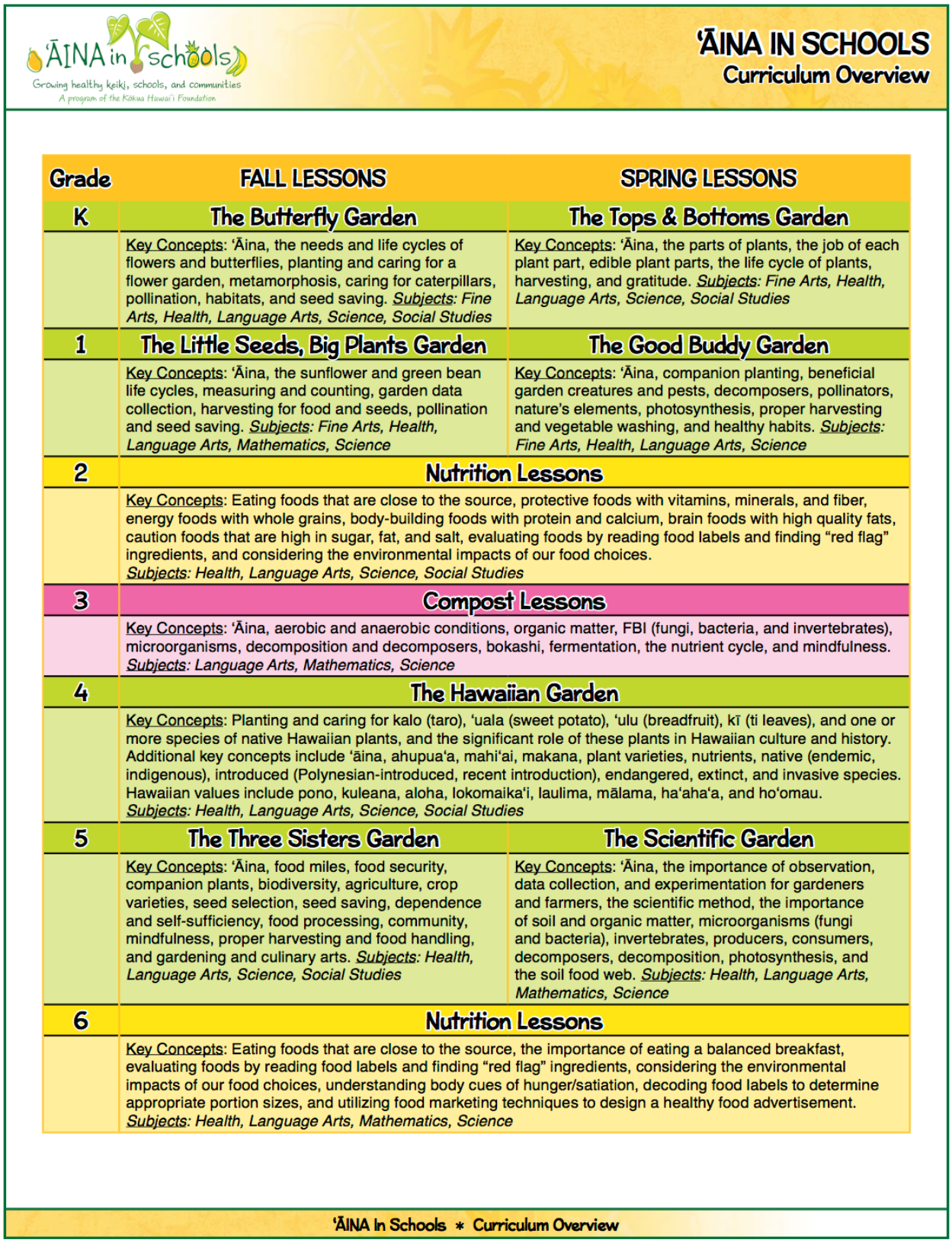


Figure 2. The ʻĀINA In Schools Program curriculum overview

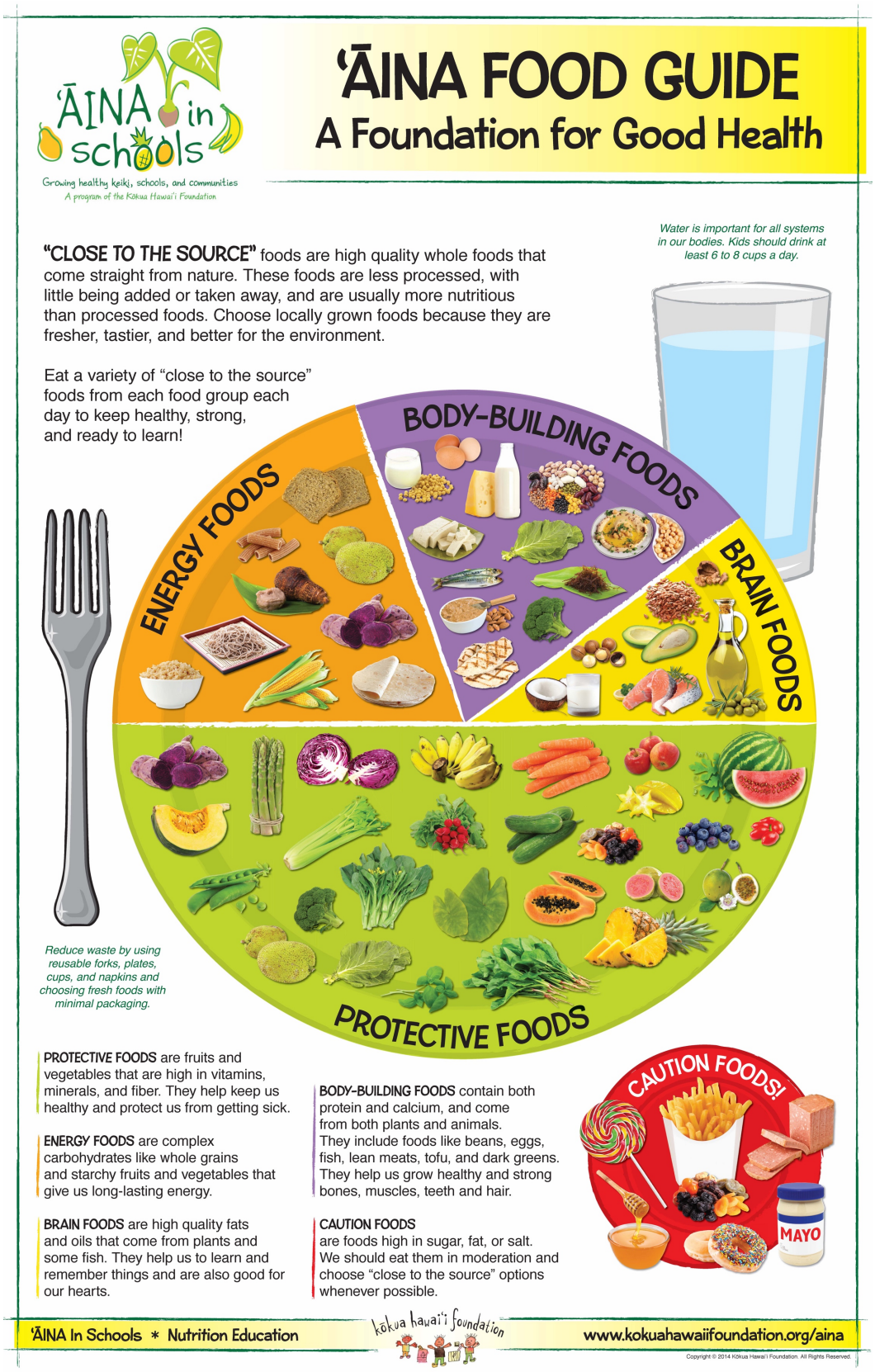


Figure 3. ʻĀINA Food Guide

Each lesson includes a healthy snack to reinforce key concepts. For example, as students prepare and eat "body building salsa" made with black beans and local corn, they learn the key concept of eating protein and calcium-rich food in order to build strong muscles and bones. They also learn that protein and calcium-rich food can come from plant sources, not only from animal sources. As a culminating project, students develop "close to the source" food advertisements, and utilize the food advertisement techniques that food corporations often use to target youth. By using this genre, students reveal the main ideas of food advertising (e.g., product placement, target audience, and advertising techniques) in order to demonstrate their knowledge and raise awareness about healthy eating to the larger student body. Their posters are displayed in the school cafeteria or developed into public service announcements which are aired during homeroom periods.

Figure 4. "Close to the source" food advertisements by sixth-grade students

I have observed that students and their families have increased the amount of "close to the source" food in their diets. Program evaluation data from the 2016-2017 school year revealed that over half of the students who participated in the program increased their knowledge of and preference for eating fruits and vegetables. Also, program evaluation data from the 2017-2018 school year revealed that 22 percent of students increased garden and nutrition-related behaviors such as gardening, cooking, and composting at home over the course of the school year (Manset, 2017).

Teachers also report the transformative nature of the nutrition curriculum in their classrooms, especially with learners of different abilities. A high school special education teacher in the 'Ewa region discusses his experience using the curriculum:

> As a special education teacher, it's important that we teach students with severe special needs about choices. This nutrition curriculum allowed me to teach my students about choosing the foods students should eat, how to prepare healthy foods, and how to make sense of what they are eating…By teaching students about food choice, we are giving them the agency and self-determination for their own lives. I became a special education teacher because I believe all students deserve an excellent education no matter their circumstance. It's time that we provide more opportunities for special needs students to engage in meaningful lessons that will prepare them for real-world situations and survival. I hope to continue teaching my students about how to eat right, how to advocate for a healthy diet, and how to make their own choices about how to live and healthy and productive life. (High school teacher, personal reflection, April 12, 2018)

For this teacher the nutrition curriculum was a tool that helped his students make informed decisions about their own well-being in order to lead to lifelong healthy choices.

Garden-based Learning

The garden-based learning component of the ʻĀINA In Schools Program connects students to the ʻāina through hands-on learning in the school garden. Garden-based learning provides experiential activities that cover the following concepts: plant and animal life cycles, habitats, plant parts, companion plants, traditional Hawaiian plants including kalo, ʻuala, ʻulu, kī, endemic and indigenous plants, biodiversity, seed saving, scientific processes, and traditional food processing skills. Teachers and students are encouraged to add information specific to their schools and communities during the delivery of the ʻĀINA In Schools Program lessons.

Figure 5. Fourth-grade students planting kalo huli at the beginning of the school year

I have also observed educators use the school garden as a site for social and emotional learning. Educators report that students have gained self-worth and a strengthened sense of cultural connection as a result of garden-based learning. A Kindergarten teacher reported:

> I entered into teaching ʻĀINA lessons cautiously and with great trepidation, however, seeing the smiling faces of my students and hearing the continuous conversations were priceless. In reflecting, I see a strong connection between these lessons and student behavior. My students gained self-respect, self-worth, and compassion. The school garden was a calming space for my students. (Elementary teacher, personal reflection, April 12, 2018)

The school garden in this example served as a site for students to develop qualities of respect and compassion. In another example, a sixth-grade teacher at Blanche Pope Elementary invited a cultural practitioner from the community to teach her students the process of growing wauke plants and making kapa. This teacher reflected on her student's experiences in their STEEAM[5] unit,

> My students are currently writing a procedural writing piece on the process of making kapa. Hearing their writing through their experiences has been meaningful. They are making meaningful connections. One students wrote, "If I am not going to practice this then what does that make me? If I am Hawaiian and I am not doing this, then what does it mean to be Hawaiian? How am I going to make my kūpuna proud? This is a way that I can make my kūpuna proud by continuing these traditional practices." Giving students the opportunity to connect with ʻāina and be part of ʻāina is important because that is where the knowledge comes from. It is not through textbooks or in a classroom. More so, it is the experience of putting their hands and their feet to the ground. That is where the lessons, teaching, and learning

[5] STEAAM refers to interdisciplinary science, technology, engineering, English language arts, visual arts, and mathematics education. STEAM refers to interdisciplinary science, technology, engineering, English language arts, and mathematics education.

happens. It is in that connection. (Elementary teacher, personal communication, March 2, 2019)

This observation is an example of how a teacher sees the connection to ʻāina as a source of knowledge and growth for her students. Students are able to learn ancestral Hawaiian practices while reflecting on and strengthening their own cultural identities. For non-Hawaiian students this is a unique opportunity to learn about Hawaiian culture as well as strengthen connections to their own cultural backgrounds.

Healthy Food On Campus

The healthy food on campus component focuses on increasing local fresh food in snack programs and school lunches to provide healthy options for students. This component also promotes healthy and waste-free ideas for home lunches, classroom celebrations, and school fundraisers. One of the programs KHF helps schools implement is the Fresh Fruit and Vegetable Program (FFVP)—a federal program that funds the procurement of fresh fruit and vegetable snacks up to two times per week for students. Healthy snack programs like FFVP encourage children to explore their culinary curiosities by trying fresh, local produce. Parents report that their children are more likely to try new food because of the healthy food they eat at school. One parent commented, "If they grow it, they will try it!" (Parent volunteer, personal communication, March 16, 2017). Another parent reported that her child asked her to buy local Ho Farms tomatoes after farmer Shin Ho did a farmer visit to her child's classroom and brought a snack of freshly picked cherry tomatoes.

In addition to increasing the amount of healthy food on campus, KHF partners with the HIDOE to provide locally-sourced produce at events like the yearly Koʻolauloa makahiki festival

at Kualoa Ranch, Oʻahu. This ensures that the message of fresh, "close to the source" local produce transfers beyond the classroom and into the community setting.

Figure 6. Koʻolauloa region students enjoying a locally-sourced snack of ʻuala, banana, oranges, and cucumbers

Agricultural Literacy

The agricultural literacy component of the ʻĀINA In Schools Program introduces students to where their food comes from and who grows and prepares it. Activities include classroom visits by local farmers, chefs, and cultural practitioners as well as field trips to farms, loʻi, loko iʻa, restaurants, and other food production sites. Every October and April, KHF invites local chefs to do cooking demonstrations for students using local ingredients. Figure 7 is a photo taken at a chef visit at Nuʻuanu Elementary school. Chef Mark Noguchi prepared a snack of Niihau lamb and ʻulu hash. He invited students to assist with the cooking process. He also described local ingredients that he brought. Every student sampled the Niihau lamb and ʻulu

hash. By a show of hands, all but one student reported that they would cook the recipe at home for their families.

Figure 3. Fifth-grade students engaging in discussion about locally grown products as Chef Mark Noguchi prepares a Niihau lamb and ʻulu hash

In addition to demonstrations by food professionals, parents are encouraged to bring the message of "close to the source" food into the classroom. One of the schools KHF partners with, Solomon Elementary, is located on Schofield Barracks—a U.S. military base in Wahiawā, Oʻahu. Most children who attend this school have parents stationed in Hawaiʻi for two to five years. At a regional docent training, the ʻĀINA In Schools Program staff asked parents to recommend any chefs in their community who might be interested in doing a chef visit. A mother mentioned that she was not a professional chef, but in Thailand where she was born and raised, her mother and grandmother were known for their cooking because her family would feed their entire village. She offered to demonstrate some of her family's recipes for her daughter's first-grade class. This mother set up cooking stations in all 11 of the first-grade classrooms and

used fresh and local ingredients to teach students how to make coconut sticky rice with mango and Thai summer rolls.

The mother recounted that as a military wife living far away from her village, it was important for her to share her cultural identity through food with her daughter and her daughter's peers. She was brought to tears speaking of how special it was to feel her mother and grandmother there with her as she taught all 11 first-grade classes! She talked about how prepping all the ingredients together brought her and her daughter closer, and she could tell that her daughter was proud that her mother was teaching all of her friends' classes. The principal of the school was also deeply moved. She suggested that all Solomon Elementary teachers begin the following school year with a food and culture unit. She wanted to have each student bring a family recipe to share during the first week of school as a way to celebrate identity across the many cultural backgrounds represented at their school. This is a wonderful example of how the agricultural literacy component serves as a platform for students to learn about where their food comes from and to cultivate respect for the people who grow and prepare their food.

Waste Reduction

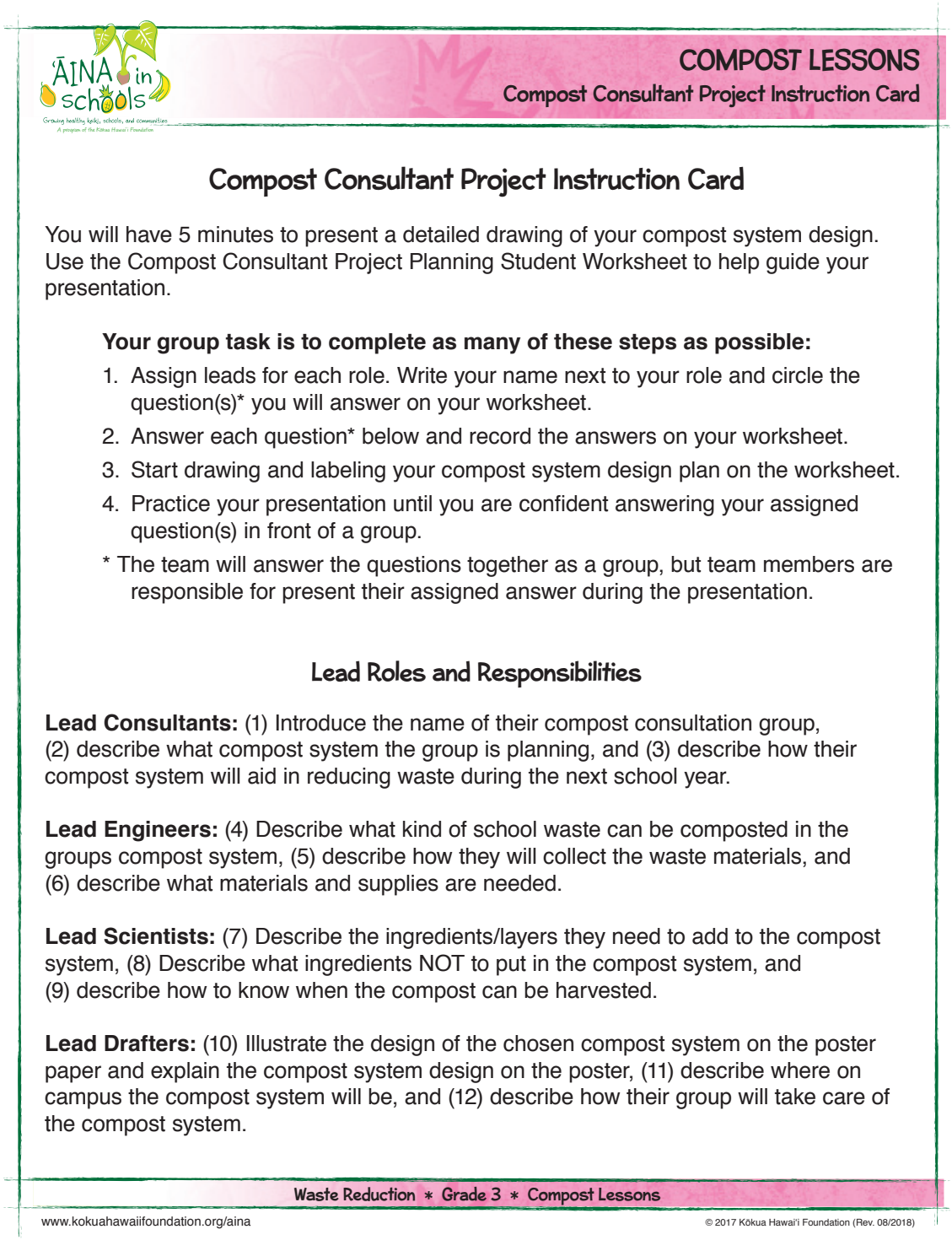
The waste reduction component of the ʻĀINA In Schools Program aims to reduce, reuse, and recycle waste produced by schools in classrooms, school gardens, schoolyards, and cafeterias. Throughout the school year, students build three different compost systems to learn how to process leftover lunch and common school waste such as paper and cardboard into nutrient-rich compost for their school garden. The three compost systems that students build, care for, and harvest compost from include: an aerobic compost pile, vermiculture (worm bins), and an anaerobic composting system called bokashi which uses fermentation to break down food waste.

Figure 8. Third-grade students learning about the role of microorganisms in the nutrient cycle at their outdoor classroom and aerobic compost pile

Each school benefits by reducing the amount of waste it generates and by increasing the fertility of the soil on campus. Middle schools and high schools also engage in waste audits by collecting and weighing the waste they generate. Waste audits often lead to student-led waste reduction plans that the school can implement. In addition to the waste reduction curriculum, the KHF 3R's School Recycling Program provides classroom recycling collection bins, orientation materials, resource guides, and other support to all Hawai‘i public, charter, and private schools.

When parent docents are not available to teach the ‘ĀINA In Schools Program lessons, community docents step in to teach the lessons. At Waialua Elementary, a docent team made up of a retired community member and two local farmers teaches the third-grade composting lessons. At the end of the year, students engage in a STEAM project where they become compost consultants. Their task is to design a schoolwide composting system to efficiently manage school

waste. Each group is made up of a lead consultant, lead engineer, lead scientist, and lead drafter. See Figure 9 for a description of each role.



ʻĀINA in schools
Growing healthy keiki, schools, and communities
A program of the Kōkua Hawai'i Foundation

COMPOST LESSONS
Compost Consultant Project Instruction Card

Compost Consultant Project Instruction Card

You will have 5 minutes to present a detailed drawing of your compost system design. Use the Compost Consultant Project Planning Student Worksheet to help guide your presentation.

Your group task is to complete as many of these steps as possible:

1. Assign leads for each role. Write your name next to your role and circle the question(s)* you will answer on your worksheet.
2. Answer each question* below and record the answers on your worksheet.
3. Start drawing and labeling your compost system design plan on the worksheet.
4. Practice your presentation until you are confident answering your assigned question(s) in front of a group.

* The team will answer the questions together as a group, but team members are responsible for present their assigned answer during the presentation.

Lead Roles and Responsibilities

Lead Consultants: (1) Introduce the name of their compost consultation group, (2) describe what compost system the group is planning, and (3) describe how their compost system will aid in reducing waste during the next school year.

Lead Engineers: (4) Describe what kind of school waste can be composted in the groups compost system, (5) describe how they will collect the waste materials, and (6) describe what materials and supplies are needed.

Lead Scientists: (7) Describe the ingredients/layers they need to add to the compost system, (8) Describe what ingredients NOT to put in the compost system, and (9) describe how to know when the compost can be harvested.

Lead Drafters: (10) Illustrate the design of the chosen compost system on the poster paper and explain the compost system design on the poster, (11) describe where on campus the compost system will be, and (12) describe how their group will take care of the compost system.

Waste Reduction * Grade 3 * Compost Lessons

www.kokuahawaiifoundation.org/aina

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Figure 9. Compost consultant lead roles and responsibilities

After the group presentations, one community docent reported,

> As the newest member of the ʻĀINA Team at Waialua Elementary, 3rd grade, I just wanted to share that I was completely blown away by the final class projects presented today. Because of some of the pre-discussions prior to this final lesson, I had low expectations as to what the third graders would prepare and present. Not only did they grasp the material, but they also came up with really well thought and realistic plans for a compost system on their school campus. They combined technology, art, and critical thinking to communicate their ideas in a passionate and informative way. There was even a little dance routine! What I most appreciated was the intelligent discussion between the children that happened around the presentations. They were holding each other accountable for their ideas. They asked really good questions and came up with even better ideas. Not only was the project not too complicated for them, but they also took it to another level. As each of them stood up and talked, they convinced me that they could play a significant role now and in the future to help restore the ʻāina and basically make a difference in whatever they were passionate about. I believe Jack Johnson and the ʻĀINA staff would have been really, REALLY proud of them! Next year, I believe with a little planning, support, and coordination, the third graders will actually be able to take the project a step further and implement their ideas across the entire Waialua Elementary school. A big mahalo to the ʻĀINA Program for making lasting impressions and giving important life skills for honoring the ʻāina. (Community docent, personal reflection, May 1, 2018)

This third-grade compost consultant project is an example of how students engage in project-based learning and assessment tasks that integrate art, literacy, science, mathematics, engineering, and technology. Through composting lessons, students recover common school waste and turn it into compost to nourish the soil in their school gardens. Students are also using their knowledge and voice to advocate for change on their school campuses.

Family and Community Outreach

The family and community outreach component of the ʻĀINA In Schools Program brings the ʻĀINA In Schools Program messages home to families and the broader community through special events such as family and wellness nights on campus, workshops, and newsletters. For the garden-based learning, nutrition education, and waste reduction components, take home letters describe the fundamental concepts and skills that students are learning about. These letters include recipes and discussion questions for caregivers to reinforce the ʻĀINA In Schools Program messages at home. In this way, students are able to talk about what they learn at school with their families.

The family and community outreach component is also designed to support new and existing community well-being efforts. I am finding that the ʻĀINA In Schools Program is serving as a catalyst for collaboration and community organizing. Teachers, principals, and parents often talk about their schools as the "piko" of their community. For example, at Kaʻaʻawa Elementary, a small school in moku ʻo Koʻolauloa, the principal has always had a vision for an outdoor classroom with a Hawaiian thatched hale and māla filled with native plants, lei plants, and medicinal plants for parents and community to gather. Last year, the KHF staff was introduced to two local professionals who work for a Honolulu-based planning firm called Helber Hastert & Fee Planners (HHF Planners). Each year, HHF Planners participates in a large-

scale service project—volunteering their time and planning resources to school communities. Their projects have included creating a wellness pathway and arbor to grow liliko‘i at Blanche Pope Elementary, an outdoor learning lab for STEAM education at Pālolo Elementary, and installing two rain tanks at Hālau Kū Mana, a Hawaiian-focused charter school in Makiki, O‘ahu.

With the hope that HHF Planners could help bring Ka‘a‘awa Elementary’s vision to life, KHF staff introduced HHF Planners to the principal. She indicated that Kualoa Ranch, one of the largest landholders in the area, was a strong school partner and in recent talks showed interest in using some of their lands for a community space. Because the school had a vision for a Hawaiian thatched hale, I asked a dear friend, Tiana Henderson, a hale builder from Hāna, Maui to be involved. The Ka‘a‘awa Elementary project moved quickly, and in just a few months, the planning team selected a site behind the school. After Kualoa Ranch cleared the land, which was a jungle of invasive trees, it was dedicated to be used as a center for ‘āina-based learning and community gathering. The initial plans for a 10-foot by 12-foot hale has been developed and the project is set to be completed during the 2019-2020 school year. See Figure 10 for a picture of Ka‘a‘awa Elementary School’s ‘āina-based learning site.

While community engagement thrives in certain school communities like Ka‘a‘awa, it is my goal to help teachers cultivate and normalize a culture of collaboration in order to sustain every school garden for long-term success. At an ‘ĀINA In Schools Program curriculum training session in the Wai‘anae region, a middle school teacher reflected on her understanding of the importance as well as the process of adopting a culture of collaboration:

> I must network to build relationships with other garden teachers to share ideas and troubleshoot problems. Also to network within the community. I cannot shy away

> from reaching out to parents and local businesses for help or time. There are probably parents, guardians, aunties, uncles, and grandparents that would love to volunteer some of their time and knowledge to my class and students. I need to build that network and keep it going strong. (Middle school teacher, personal reflection, April 12, 2018)

These two excerpts inspire me to continue mentoring and supporting teachers in their ʻāina-based efforts. The Kaʻaʻawa story is one of my favorite examples of community organizing and agency to create cultural kīpuka (McGregor, 2006) within the school community. The collaboration amongst private, public and nonprofit sectors around ʻāina-based efforts is bringing to life the transformative visions of community leaders. These kīpuka provide a safe space to strengthen connections in the community and to the ʻāina. The Waiʻanae story demonstrates that teachers are creating the support systems essential for students' authentic learning experiences.

Figure 10. Kūpuna, keiki, and community members gather for a ceremony to bless the future site of Kaʻaʻawa Elementary's ʻāina-based learning center

The ʻĀINA In Schools Program Curriculum Training for Educators

At this stage of my career, my most fulfilling experiences have come from mentoring educators to incorporate ʻāina-based pedagogies into their teaching praxis. One of my main kuleana at Kōkua Hawaiʻi Foundation (KHF) is to develop, manage, instruct, and evaluate professional development courses for educators in partnership with the HIDOE Windward Academy for Career and Technical Education[6]. The course goals focus on overcoming barriers and building capacity within the school community to deliver ʻāina-based and sustainability curricula. Teachers have the option of taking one or two courses per year. One course covers garden-based learning and compost education and the other course covers nutrition education for three professional development credits per course. Professional development credits help HIDOE teachers advance in pay scale. For each course, teachers receive a curriculum binder, digital files of all KHF resources, and supplies to support garden-based learning and compost education. For additional garden and compost equipment, or nutrition supplies such as snack ingredients and cooking appliances, teachers can apply for a KHF Project Grant of up to $1000 per school, per school year. KHF staff members also visit each teacher's school for on-site technical support.

Throughout the school year, teachers attend the following meetings:

- an orientation gathering,
- fall and spring curriculum training sessions that cover curricula content, garden/compost/nutrition basics, school garden safety, food allergy considerations, and lesson adaptations and assessment,

[6] For more information about the HIDOE Windward District Academy for Career and Technical Education, see: https://sites.google.com/kk.k12.hi.us/windwardcte/home

- two out of four farm to school field trips to a school garden, along with nearby loʻi and loko iʻa, or to farms in order to learn about their educational offerings, and
- a final hōʻike where teachers present to each other their lessons learned from teaching garden, compost, and nutrition education.

During the 2017-2018 school year, teachers who participated in these professional development courses expressed their intent to integrate the ʻĀINA In Schools Program curriculum into their teaching practices. A grade one and two combination class teacher at a Hawaiian-focused charter school reported:

> While teaching the lessons to our students, what attracted their attention was being outdoors, being in the soil, and moving around. We integrated soil, compost, rainforests, and garden content into our reading groups and writing prompts during the mornings before spending our afternoons working in the garden. Teacher-guided discussions became student-led conversations around the garden and students teaching students from other grades about the progress of their plants. It made the job of teaching easy because the environment of the garden was a learning space of exploration and discovery and everyone felt that it was theirs and it became a collective kuleana for everyone to care for the garden. (Elementary teacher, personal reflection, April 12, 2018)

A grade four teacher from a school in the Koʻolauloa region also responded, "I don't think my class would have understood the ahupuaʻa system based on facts given in a textbook without physically touching, planting and tasting the kalo plant, which I know they will remember for a lifetime!" (Elementary teacher, personal reflection, April 12, 2018). These two excerpts describe the transformative nature of experiential learning and how ʻāina-based education can cultivate

community within a classroom setting. The teachers who I have worked with have expressed how much their experiences have impacted their growth as educators.

Conclusion

This pūʻolo describes my role in bridging ʻŌiwi knowledge and practice to everyday school life through the ʻĀINA In Schools Program. I discuss the mission of Kōkua Hawaiʻi Foundation, how the ʻĀINA In Schools Program unfolds in Hawaiʻi's schools and communities, and highlights teachers' voices about the transformative student outcomes they see as a result of the program. These outcomes include the ʻĀINA In Schools Program being used as

- skills and behavioral training for lifelong well-being,
- a powerful educational tool to bring relevancy to academics,
- a means toward strengthening cultural identity within students,
- professional development to help teachers evolve in their teaching praxis, and
- a catalyst for collaboration and community organizing.

As I reflect on my work, I am grateful that I have had opportunities to create educational experiences that connect students and teachers to the ʻāina. From student feedback, I know that I am positively contributing to their engagement in learning. As I wrapped up a year-long Hawaiian garden unit at an elementary school in Honolulu, I had an encounter that reinforced to me that students of diverse cultural backgrounds were building positive and nourishing relationships to the ʻāina: While enjoying our pāʻina of all the Hawaiian food the fourth-grade class had grown throughout the year, I overheard one student say to another as they ate their paʻi ʻai and palula snack, "This reminds me of home", and she replied to him, "This is the first time I felt like I was home." For both students, it was their first year living on Oʻahu, recently relocated from the island of Chuuk. Not wanting to interrupt their moment, I continued on with my work.

As I packed up my things, the young girl came up to me and said, “Thank you, Aunty Summer, for teaching us how to grow kalo and ʻuala, this was the first time I felt like I was home and it made me happy.” In my naʻau, I knew that the transformative nature of the ʻāina would continue to have a long-lasting impact on these students.

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CONCLUSION

Summary

This research compiles five dissertation pūʻolo to explore the value and agency of ʻāina-based education across diverse learning environments such as natural ecosystems, regenerative community food systems, home and community life, and academic institutions.

Pūʻolo 1: "ʻĀina-based Pedagogies: Ancestral Principles, Pedagogy, and Outcomes" explores the growth and evolution of ʻāina-based education within the context of ancestral ʻŌiwi principles: ʻōlelo Hawaiʻi, moʻokūʻauhau, hoʻomana, ʻāina momona, kuleana, aloha ʻāina, mauli ola, ʻike kupuna, moʻolelo, and ʻohana. My findings reveal that ʻāina-based pedagogies utilize ʻŌiwi approaches to education and well-being, give cultural knowledge relevance in our time, and catalyze ʻŌiwi agency to improve the health and well-being of Kānaka ʻŌiwi and the ʻāina.

Pūʻolo 2: "Arriving at an ʻĀina Aloha Research Framework: What Is Our Kuleana as the Next Generation of ʻŌiwi Scholars" explores my relationship to ʻāina and how it influences my beliefs about research. The time I spent at Ka Papa Loʻi ʻo Kānewai inspired the ʻĀina Aloha Research framework. This framework helps me analyze the knowledge given to me by Drs. Jonathan K. Osorio and Davianna McGregor and share it with my peers. The framework guides how I conceptualize, enact, and disseminate research within Kanaka ʻŌiwi communities.

Pūʻolo 3: "Towards Living Mālama ʻĀina: Acting Upon Kuleana Through ʻOhana, Education, and Well-being" is a video presentation that illustrates how I design, apply, and evaluate ʻāina-based pedagogies within the context of intergenerational community education. This experience has helped deepen my understanding of the concept of kuleana and what role ʻāina-based education has in helping others cultivate their kuleana to ʻāina.

Pūʻolo 4: "Stories of ʻĀina-based Learning, Healing, and Transformation: I Ola Kākou i ka Hoʻolōkahi" explores five unique Oʻahu food systems through the lens of the next generation of aloha ʻāina practitioners, educators, healers, and leaders. The co-researchers present moʻolelo about (a) how their upbringing guides them to their current work, (b) the goals of their education and leadership models, and (c) how their efforts contribute to the health of the lāhui.

Pūʻolo 5: "ʻĀina-based Pedagogies in Hawaiʻi Schools: Kōkua Hawaiʻi Foundation's ʻĀINA In Schools Program" describes the ʻĀINA In Schools Program, a farm to school initiative of the Kōkua Hawaiʻi Foundation. My findings suggest that the ʻĀINA In Schools Program is a powerful educational tool, a means for strengthening cultural identity, skills training for life-long healthy living, and an impetus for community organizing.

Overall, the findings from all five dissertation pūʻolo reveal that ʻāina-based pedagogies:

- are vessels for Kānaka ʻŌiwi to enact agency and cultivate abundance (piha ka ʻōpū) for current and future generations
- are a uniquely ʻŌiwi process built upon a foundation of ancestral principles that are inclusive of, and empowering to, Hawaiʻi's diverse cultures,
- comprise a field of education and research that cannot be monopolized by any single discipline because they embody multiple areas of content knowledge that continually shift and adapt like the ʻāina itself,
- require learners to go beyond cultivating a "sense of place" by also developing an ethic of aloha and justice, and in time, constructing an identity and worldview relative to their relationships and kuleana to ʻāina, and
- offer timely and critical approaches to learning that are capable of redistributing power across educational, ecological, and socio-cultural settings.

Discussion

This discussion focuses on how my involvement in the field of ʻāina-based education has deepened my understanding of kuleana. Kuleana to ʻāina can be understood as the responsibility of humanity to ensure the continuity of the natural ecosystems that sustain life. I offer three areas of constructing kuleana related to ʻāina to help envision a framework for ʻāina-based pedagogies across the diverse learning environments I discuss in the five pūʻolo. I have come to understand kuleana to ʻāina metaphorically as comprising: ke kuleana pili i ke kānaka (societal responsibility), ke kuleana pili i ka ʻāina momona (ecological responsibility), and ke kuleana pili i ka hoʻopaʻa (educational responsibility).

Ke Kuleana Pili i ke Kānaka

Ke kuleana pili i ke kānaka illustrates the importance of cultivating responsibility relative to ʻohana and community with a focus on active participation and agency to construct new forms of wealth. Enos (2015) refers to this movement as restoring ancestral abundance and Goodyear-Kaʻōpua (2013) describes it as a means for sustainable self-determination. Sustainable self-determination is an approach to restoring relationships between people and their homelands, to cultivate agency amongst communities, and to reduce dependence on the global market economy for basic needs. Basic needs are the available goods, services, and resources within the local community. Cultivating kuleana pili i ke kānaka requires reconstructing ʻohana systems and working towards eco-justice. As Bowers (2001, p. 7) notes, "The recovery of the capacity of different cultural groups to sustain traditions that contribute to self-sufficiency, mutual support, and symbolic expression." The focus of an eco-justice pedagogy is to cultivate an eco-literate society, the collective group that pursues eco-justice and focuses on building relationships and skills that build community prosperity and reduce dependence on consumerism.

Ke Kuleana Pili i ka ʻĀina Momona

Ke kuleana pili i ka ʻāina momona involves establishing and deepening physical relationships to the ʻāina, which is often referred to today as "natural resources." Vaughan, (2018, p. 25) states "the community that makes up any given place consists not just of people but of elements of the natural world, which are also considered family." Chief Oren R. Lyons of the Turtle Clan of the Onondaga Nation affirms that humans are but a part of the natural world and Mother Earth is a relative, not a resource (Wildcat, 2016). Bowers (2013) advocates for an earth democracy, "the right of other species to play their role in the world's diverse ecosystems without being reduced to having only economic value" (p. 228). The concept of an earth democracy is fundamental in Kānaka ʻŌiwi and indigenous worldviews—all life is sacred and all natural creation has a function (Kanahele, 2005). The cultivation of kuleana pili i ka ʻāina momona requires a paradigm shift from the dominant anthropocentric worldview (Hamilton, Gemenne, & Bonneuil, 2015) to an eco-centric worldview, which places value on all animate and inanimate entities regardless of their practicality to humans (Kortenkamp & Moore, 2001; Leopold, 1986). An understanding of ecological responsibility moves beyond cultivating relationships to ʻāina toward challenging humanity to shape consumption patterns relative to the limitations and prospects of the local environment (Bowers, 2001; Morishige et al., 2017).

A contemporary approach to actualize this belief system is in the growing field of circular economies. Circular economies keep materials and resources in the economy for as long as possible, minimize waste, decouple economic growth from consumption of natural resources, and focus on waste prevention. Circular economies, thereby, minimize environmental degradation, create jobs, enhance society, and enhance natural resources. (Beamer, Thorenz, & Tuma, 2019).

Ke Kuleana Pili i ka Hoʻopaʻa

Ke kuleana pili i ka hoʻopaʻa not only focuses on the learning and practice of ʻike kupuna, it also requires learners to negotiate ways in which they are reliant on western ideology and technologies and how that may further degrade local ecosystems. In other words, this means striving to live a life reflective of ancestral knowledge, values, language, and practices within the social constructs of a structurally unjust and competitive western system. According to Bowers (2013), it is no longer enough to focus

> primarily in learning traditional knowledge of how to live within the limits and possibilities of the local bioregion…environmental educators need to provide opportunities for students to ask questions about the differences between their own traditions and relying upon western ways of thinking and uses of technologies. (p. 229)

In regard to training educators, ke kuleana pili ka hoʻopaʻa suggests that educators be mentored in ways that prepare them to have consciousness-raising discussions with their students. Smith (2004) notes:

> Indigenous educators must be trained to be change agents whose primary task is the transformation of undesirable circumstances. They must develop radical pedagogy that is informed by their cultural preferences and by their own critical circumstances. They must be taught about the importance of reflecting on and questioning their work: What, for example, is transformative practice? How can it be achieved? Do indigenous people's needs and aspirations require different schooling approaches? Who benefits? (p. 51)

In order for Hawai‘i to evolve beyond the undesirable circumstance of degraded local and global natural ecosystems, critical question such as the ones posed by Smith are beneficial in the mentorship of teachers whether they are Kānaka ‘Ōiwi or not.

Future Research

As I mentioned in the positionality section of the introduction, the majority of my work and research is O‘ahu focused. For future research, I am interested in collaborating with practitioners and educators on different islands to further explore the value of ‘āina-based pedagogies in the uniqueness of their settings. After working with my peers across the pae ‘āina, uniting with other indigenous groups will be of benefit. Listening to one another’s experiences and the successes and challenges of ‘āina-based pedagogies will help strengthen the larger indigenous land-based education movement (Wildcat, McDonald, Irlbacher-Fox, & Coulthard, 2016)

Finally, this dissertation does not touch upon the stigma associated with ‘āina-based education. While feedback from the teachers and parents that I work with is predominantly positive, misconceptions of ‘āina-based work endures. Some segment of the public views tending to the land—whether it may be watering the school garden, a one-day field trip to a lo‘i, or a career in farming—as regressive. For example, an elementary school principal in Honolulu once expressed concern from several parents who questioned why their children were pulling weeds in the school garden when they should have been in the classroom focusing on their academics. For other parents, cultivating food represents a laborious “plantation” lifestyle that marginalized groups have worked hard to remove their children from. Similar viewpoints also exist in Kānaka ‘Ōiwi communities; I have heard this rhetoric echoed from both my family and Kanaka ‘Ōiwi faculty in the University of Hawai‘i system.

For ʻāina-based education to successfully cultivate kuleana to ʻāina within learners and to change the culture of education, there must be a change in perception of ʻāina-based work. It is critical, therefore, to cultivate an attitude that values ʻāina-based education; one approach is by creating positive and engaging learning environments for students. As teachers see their students engaged in learning as a result of ʻāina-based education, the use of ʻāina-based pedagogies becomes destigmatized. Likewise, as parents see their children engaged with the ʻāina, they too become engaged with the ʻāina, as Kuʻuleilani Samson explains in Pūʻolo 4:

> Everyone says that the keiki are the future leaders. So when we send them home with knowledge about how to plant seeds or how to make their own salad dressing with the herbs they have picked from the farm, we know that they are going to share that knowledge with their parents. When parents see their keiki are interested in planting seeds and growing food, those parents also get interested and want to be involved. (K. Samson, personal communication, October 8, 2018)

In my career, I have witnessed the influence that students have on their families. At Waialua Elementary, a mother mentioned how on the days her daughter has an ʻĀINA In Schools Program garden lesson, she comes home so proud to share the fruit and vegetables that she has grown. Because of this, the mother decided to come to an ʻĀINA In Schools Program docent training to learn more about the program. She is now a parent docent who teaches monthly ʻĀINA In Schools Program garden lessons to her daughter's grade level. She says that gardening is something new that she and her daughter can both enjoy and do together.

As evidenced by these accounts, change must come through relationship building, meaningful interactions with ʻāina, and rigorous scholarship. Research that further examines the impact of ʻāina-based work may help others understand the ecological, societal, economical, and

educational value that it possesses. Additionally, rigorous scholarship may help develop modules and assessment tools to prepare teachers to integrate ʻāina-based pedagogies in their teaching praxis.

Hoʻopau Pono

Not long ago a dear friend, Dr. Manulani Aluli Meyer, asked me to facilitate the ʻāina-based education strand of the ʻAha ʻĀina Aloha, a conference held at University of Hawaiʻi West Oʻahu (UHWO). The ʻaha was a diverse gathering of UHWO faculty and students, community members, and First Nations' graduate students of the University of Saskatchewan Indigenous Land-based Education cohort. The purpose of the ʻaha was to explore and celebrate three strands: (a) welina Honouliuli: Stories of our beloved ʻEwa; (b) cultural landscaping: ecological rehabilitation practices; and (c) ʻāina-based education: Hawaiʻi educators and First Nations' graduate students.

Pauline Sato and Mahina Cavalieri of Mālama Learning Center opened the day-long session by laying the context of ʻāina-based education in the ʻEwa moku. They discussed their educational outreach to schools and communities that involves controlling two invasive species, the coconut rhinoceros beetle and little fire ant on Oʻahu. After their presentation, twenty-six First Nations' masters and doctorate students presented their interdisciplinary land-based projects in their communities. As part of the two-year indigenous land-based education program, each graduate student and the community they work in co-designs a research project that helps to meet an established need. Projects range from food sovereignty initiatives, native language programs, deconstructing colonial curricula and designing place-based units within the state school system, to indigenizing exercise and body movement.

The day concluded with Anuheali‘i of Camp Pālehua, a camp and reforestation project within the moku ‘o ‘Ewa. He challenged the group to reflect on the authenticity and equity of ‘āina-based education. He asked: How can ‘āina-based and indigenous land-based education more effectively serve our communities? I was asked to gather everyone’s stories and present them to the larger group. It was a special task for me because I was on a similar journey myself alongside the First Nations’ students. While they were beginning their graduate school journey, I was in the culminating stages of mine—in the final moments of writing this dissertation. I realized that the agency of the First Nations’ graduate students to improve the well-being of their communities paralleled the agency of Danielle, Ikaika, Kaui, and Ku‘uleilani, the mahi ‘ai and mahi i‘a practitioners and co-researchers discussed in Pū‘olo 4. I heard about the impacts of language and cultural revitalization that resonate with the Mauiakama summer program (Oliveira, 2017) described in Pū‘olo 1. Finally, I listened to a school principal present about his project to decolonize the school curriculum through indigenous land-based pedagogy and it reminded me of the courageous Hawai‘i State Department of Education principals who advocate for ‘āina-based education in a school system that has historically marginalized Hawaiian language and cultural education.

I assisted with the culminating activity of the day. This involved the collection and weaving together of mo‘olelo entitled *Sacred Teachings*. From Hawai‘i to Saskatchewan and beyond, we have a lot to share and learn from each other.

Sacred Teachings

The sacredness of learning and teaching from the ‘āina—

to bring meaning, function, and purpose to learning,

to regenerate and rehabilitate ‘āina in context with place,

for native language revitalization. Our languages are the languages of the land,
for the continuity and normalization of the languages and ceremonies of our ancestors.

The sacredness of learning and teaching from the ʻāina—
for the wrestling and healing of political injustices,
to disrupt colonial curriculum,
for improving fitness and decolonizing exercise and movement,
to relearn and practice our sovereignty to feed and heal ourselves,
to unlearn poverty.

The sacredness of learning and teaching from the ʻāina—
to re-center families, communities, and intergenerational values,
to teach us how to shelter, birth, nurture and protect life,
as a space for the reconciliation of settler paradigms,
to learn how to grow food and medicine in our own backyards,
to move us closer to our families—move us closer to finding ourselves.

The sacredness of learning and teaching from the ʻāina—
to break down structural inequalities,
to put the value back into sacred spaces and cultural practices,
as places of healing and regeneration from the shame. It was not your fault.

The sacredness of learning and teaching from the ʻāina—

As the unconditional lover of all. You are the solution. Not the problem.

We may not always be sure of how, but we know why,

the firm belief and deep sense of the ʻāina's ability to heal, teach, and love.

To evolve.

The sacredness of learning and teaching from the ʻāina exists to connect us globally because life, well-being, vibrancy, abundance, and balance are found in our togetherness.

E ola kākou i ka hoʻolōkahi.

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